CDX-C7850R

SERVICE MANUAL

AEP Model
UK Model

Model Name Using Similar Mechanism	CDX-C780R
CD Drive Mechanism Type	MG-363S-121
Optical Pick-up Name	KSS-521A

SPECIFICATIONS

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	99 dB
Frequency response	10 - 20,000 Hz
Wow and flutter	Below measurable limit

Tuner section

FM

Tuning range	87.5 - 108.0 MHz
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz 50 dB at 200 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.7% (stereo), 0.4% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 - 15,000 Hz

MW/LW

Tuning range	MW : 531 - 1,602 kHz LW : 153 - 281 kHz
Aerial terminal	External aerial connector
Intermediate frequency	10.71 MHz / 450 kHz
Sensitivity	MW : 30 µV LW : 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 - 8 ohms
Maximum power output	45 W × 4 (at 4 ohms)

General

Outputs	Line outputs (3) Power aerial relay control lead Power amplifier control lead Telephone ATT control lead Illumination control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 182 mm (w/h/d)
Mounting dimension	Approx. 182 × 53 × 163 mm (w/h/d)
Mass	Approx. 1.4 kg
Supplied accessories	Rotary commander (RM-X4S) (1) Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

FM/MW/LW COMPACT DISC PLAYER

MICROFILM

SONY®

SERVICE NOTE

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

NOTES ON PICK-UP FLEXIBLE BOARD

The pick-up flexible board in this set is secured to the optical pick-up with an adhesive tape. Once the tape is removed, an adhering force becomes weak, and it cannot be reused.
Therefore, if the optical pick-up is replaced, replace also the pick-up flexible board with a new one.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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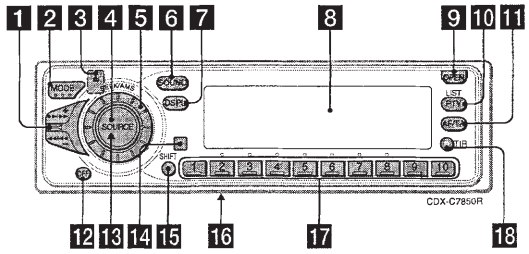
SECTION 1
GENERAL

This section is extracted from instruction manual.

Location of controls



Refer to the listed pages for details.

1 **SEEK/AMS (seek/Automatic Music Sensor/manual search) control** **9, 10, 11, 13, 18, 19, 20, 25, 26, 28, 31**

2 **MODE (band/unit select) button** **12, 13, 24, 26, 30**

3 **⏏ (eject) button (located on the front side of the unit hidden the front panel)** **8**

4 **SOURCE (source select) button** **8, 12, 13, 16, 23, 24, 26, 30**

5 **Dial (volume/subwoofer volume/bass/treble/left-right/rear-front control)** **7, 18, 22, 29, 30**

6 **SOUND button** **22**

7 **DSPL (display mode change) button** **8, 9, 14, 15, 24, 25, 29, 30**

8 **Display window**

9 **OPEN button** **6, 8, 33**

10 **PTY/LIST button**
Disc Memo **29, 30**
List-up **30**
RDS Programme **20**

11 **AF/TA button** **15, 16, 17**

12 **OFF button** **6, 8**

13 **Reset button (located on the front side of the unit behind the front panel)** **6**

14 **Sensor for the optional wireless remote**

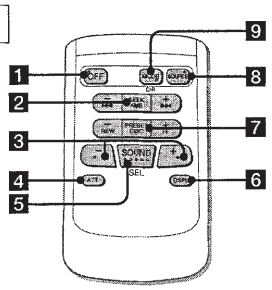
15 **SHIFT button**
PLAY MODE **10, 11, 12, 14, 16, 17, 26, 27, 28, 31**
REP **10, 26**
SET UP **7, 9, 20, 23, 24, 25**
SHUF **10, 26**

16 **POWER SELECT switch (located on the bottom of the unit)**
See "POWER SELECT switch" in the Installation/Connections manual.

17 **During radio reception:**
Number buttons **13, 16, 17**
During CD/MD playback:
Direct disc selection buttons **25, 26**

18 **TIR button** **18, 19**

Optional wireless remote (RM-X47)



The corresponding buttons of the wireless remote control the same functions as those on the unit.

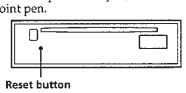
1 **OFF button**
2 **SEEK/AMS button**
3 **⊖ ⊕ buttons**
4 **ATT button**
5 **SOUND/SEL button**
6 **DSPL button**
7 **PRESET/DISC button**
You cannot perform manual search and manual tuning with the remote.
8 **SOURCE button**
9 **MODE/DIR button**

When the POWER SELECT switch is set to the Ⓑ position, the unit cannot be operated with the wireless remote unless (SOURCE) on the unit is pressed or a CD is inserted to activate the unit first.

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Remove the front panel and press the reset button with a pointed object, such as a ballpoint pen.



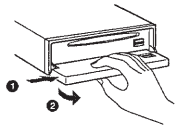
Notes
- *Pressing the reset button will erase the clock setting and some memorised functions.*
- *When you connect the power supply cord to the unit or reset the unit, wait for about 10 seconds before you insert a disc. If you insert a disc within these 10 seconds, the unit will not be reset, and you will have to press the reset button again.*

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

1 Press (OFF).

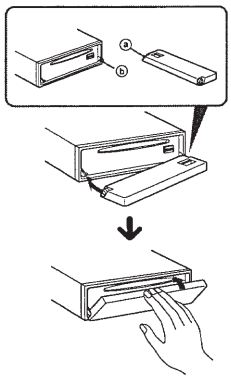
2 **Press (OPEN), then slide the front panel to the right side, and pull out from the left side.**



Notes
- *Be sure not to drop the panel when detaching it from the unit.*
- *If you detach the panel while the unit is still turned on, the power will be turned off automatically to prevent the speakers from being damaged.*
- *When you carry the front panel with you, use the supplied front panel case.*

Attaching the front panel

Place the hole ⓔ of the front panel onto the spindle ⓑ on the unit as illustrated, then push the left side in.



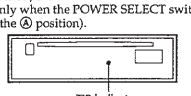
Notes
- *Be sure not to attach the front panel upside down.*
- *Do not press the front panel too hard against the unit when attaching it.*
- *Do not press too hard or put excessive pressure on the display window of the front panel.*
- *Do not expose the front panel to direct sunlight or heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight or where there may be a considerable rise in temperature.*

Caution alarm

If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds (only when the POWER SELECT switch is set to the Ⓐ position).

TIR indicator

If you pull out the ignition key while the TIR function is on, the TIR indicator flashes a few times (only when the POWER SELECT switch is set to the Ⓐ position).



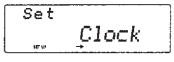
For more information on the TIR function, refer to "Recording the traffic announcements" (page 18).

Setting the clock

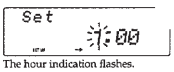
The clock uses a 24-hour digital indication.

Example: To set the clock to 10:08

1 **Press (SHIFT), then press (3) (SET UP) repeatedly until "Clock" appears.**

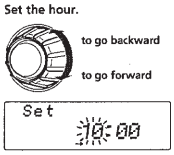


❶ **Press (5) (→).**

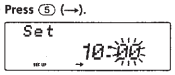


The hour indication flashes.

❷ **Set the hour.**

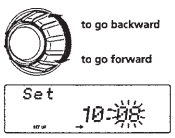


❸ **Press (5) (→).**

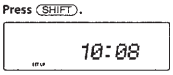


The minute indication flashes.

❹ **Set the minute.**



2 **Press (SHIFT).**



The clock starts.

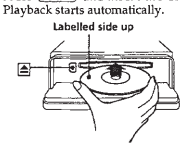
3 **Press (SHIFT).**
After the clock setting is complete, the display return to normal playback mode.

Note
If the POWER SELECT switch on the bottom of the unit is set to the Ⓑ position, turn the power on first, then set the clock.

CD Player

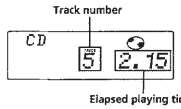
Listening to a CD

1 **Press (OPEN) and insert the CD.**
Playback starts automatically.



2 **Close the front panel.**

If a CD is already inserted, to start playback press (SOURCE) repeatedly until "CD" appears.

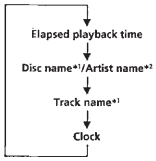


Note
To play back an 8 cm CD, use the optional Sony compact disc single adapter (CSA-8).

To	Press
Stop playback	(OFF)
Eject the CD	(OPEN) then ⏏

Changing the display item

Each time you press (DSPL), the item changes as follows:



**1 If you inserted a non-CD TEXT disc, "NO D.Name" or "NO T.Name" appears in the display.*
**2 If you play a CD TEXT disc, the artist name appears in the display after the disc name. (Only for CD TEXT discs with the artist name.)*

After you select the desired item, the display will automatically change to the Motion Display mode after about a few seconds. In the Motion Display mode, all the above items are scrolled in the display one by one in order.

Tip
The Motion Display mode can be turned off. (See "Changing the sound and display settings" on page 23).

You can label CD and CD TEXT discs with a personalized name using the disc memo function, refer to "Labelling a CD" (page 29). However, if you use personalised labels, they will always take priority over the original CD TEXT information when such information is displayed.

Automatically scrolling a disc name
— Auto Scroll

If the disc name, artist name, or track name on a CD TEXT disc exceeds 10 characters and the Auto Scroll function is on, the following information will be automatically scrolled.
- *The disc name appears when the disc has changed (if the disc name is selected).*
- *The track name appears when the track has changed (if the track name is selected).*

If you press (DSPL) to change the display item, the disc or track name of the CD TEXT disc is scrolled automatically whether you set the function on or off.

1 **During playback, press (SHIFT).**

2 **Press (3) (SET UP) repeatedly until "A.Scrl" appears.**

3 **Press (5) (→) to select "A.Scrl on."**

4 **Press (SHIFT).**

To cancel Auto Scroll, select "A.Scrl off" in step 3 above.

Note
For some CD TEXT discs with extremely many characters, the following cases may happen:
— Some of the characters are not displayed.
— Auto Scroll does not work.

Tips
- *To manually scroll the long name of a CD TEXT disc after activating the Auto Scroll function, press (SHIFT), then press (2) (←) (manual scroll).*
- *If you want to display the original CD TEXT information after labelling the CD TEXT disc with a personalised name, press (SHIFT), then press (5) (→).*

Locating a specific track
— Automatic Music Sensor (AMS)

During playback, push the SEEK/AMS control up or down and release, for each track you want to skip.

To locate succeeding tracks

To locate preceding tracks

Locating a specific point in a track
— Manual Search

During playback, push the SEEK/AMS control up or down and hold. Release when you have found the desired point.

To search forward

To search backward

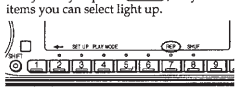
Note
If "└└ └└" or "┐┐ ┐┐" appears in the display, that means you have reached the beginning or the end of the disc and you cannot go any further.

Playing a CD in various modes

You can play CDs in various modes:
- Repeat (Repeat Play) repeats the current track.
- Shuf (Shuffle Play) plays all the tracks in random order.

Playing tracks repeatedly
— Repeat Play

1 **During playback, press (SHIFT).**
Every time you press (SHIFT), only the items you can select light up.



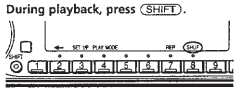
2 **Press (7) (REP) repeatedly until "Repeat 1" appears.**
Repeat Play starts.

3 **Press (SHIFT).**

To return to normal playback mode, select "Repeat off" in step 2 above.

Playing tracks in random order
— Shuffle Play

1 **During playback, press (SHIFT).**



2 **Press (8) (SHUF) repeatedly until "Shuf 1" appears.**
Shuffle Play starts.

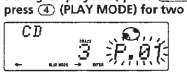
3 **Press (SHIFT).**

To return to normal playback mode, select "Shuf off" in step 2 above.

Creating a programme
— CD Programme Memory

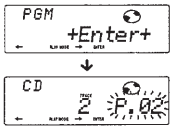
You can play the tracks in the order you want by making your own programme. You can select up to 24 tracks for a programme. You can store the programmes in memory.

1 **During CD playback, press (SHIFT), then press (4) (PLAY MODE) for two seconds.**



2 **Push the SEEK/AMS control up or down to select the track you want.**

3 **Press (6) (ENTER).**



4 **To continue entering tracks, repeat steps 2 and 3.**

5 **When you finish selecting tracks, press (4) (PLAY MODE) for two seconds.**

6 **Press (SHIFT).**

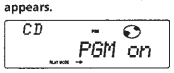
Notes
- *"*Wait*" appears in the display while the unit is reading the data.*
- *"*Mem Full*" appears in the display when you try to enter more than 24 tracks into a programme.*

Playing the stored programme

1 **Press (SHIFT).**

2 **Press (4) (PLAY MODE) repeatedly until "PGM" appears.**

3 **Press (5) (→) repeatedly until "PGM on" appears.**



Programme Play starts.

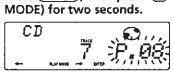
4 **Press (SHIFT).**

To return to normal playback mode, select "PGM off" in step 3 above.

Note
"Not ready" appears in the display if no track is stored in the programme.

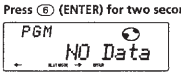
Erasing an entire programme

1 **Press (SHIFT), then press (4) (PLAY MODE) for two seconds.**



2 **Press (2) (←) repeatedly until "DEL" appears.**

3 **Press (6) (ENTER) for two seconds.**



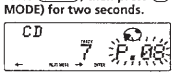
The entire programme is erased.

4 **When you finish erasing programmes, press (4) (PLAY MODE) for two seconds.**

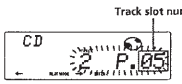
5 **Press (SHIFT).**

Adding tracks to a programme

1 **Press (SHIFT), then press (4) (PLAY MODE) for two seconds.**



2 **Press (2) (←) or (5) (→) to select the track slot number where you want to insert a track.**



3 **Push the SEEK/AMS control up or down to select the track you want to insert.**

4 **Press (6) (ENTER) to enter the track.**
The current track in that slot number and the succeeding tracks shift down.

5 **To continue inserting tracks, repeat steps 2 through 4.**

Note
*When a 24 slots have been filled, "*Mem Full*" appears in the display, and you cannot insert more tracks.*

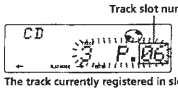
6 **When you finish inserting tracks, press (4) (PLAY MODE) for two seconds.**

7 **Press (SHIFT).**

Erasing tracks in a programme

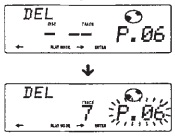
1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.

2 Press (2) (←) or (5) (→) to select the track you want to erase.



The track currently registered in slot 6.

3 Press (6) (ENTER) for two seconds.
When you erase a track,from a slot number, the succeeding tracks shift up to fill the gap.



4 To continue erasing tracks, repeat steps 2 and 3.

5 When you finish erasing tracks, press (4) (PLAY MODE) for two seconds.

6 Press (SHIFT).

Radio

Memorising stations automatically

— Best Tuning Memory (BTM)

The unit selects the stations with the strongest signals and memorises them in the order of their frequencies. You can store up to 10 stations on each band (FM1, FM2, MW, and LW).

Caution
When tuning in stations while driving, use Best Tuning Memory to prevent accidents.

1 Press (SOURCE) repeatedly to select the tuner.
Each time you press (SOURCE), the source changes as follows:

TUNER → CD → MD*

** If the corresponding optional equipment is not connected, this item will not appear.*

2 Press (MODE) repeatedly to select the band.
Each time you press (MODE), the band changes as follows:

FM1 → FM2 → MW → LW

3 Press (SHIFT), then press (4) (PLAY MODE) repeatedly until "B.T.M" appears.

4 Press (5) (→).
The unit stores stations in the order of their frequencies on the number buttons.
A beep sounds when the setting is stored.

5 Press (SHIFT).

Notes
- *The unit does not store stations with weak signals. If only a few stations are received, some number buttons will retain their former setting.*
- *When a number is already indicated in the display, the unit stores stations in order from the one currently displayed.*

Memorising only the desired stations

You can preset up to 40 stations (10 each for FM1, FM2, MW, and LW) in the order of your choice.

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band.

3 Push the SEEK/AMS control up or down to tune in the station that you want to store on the number button.

4 Press and hold the desired number button ((1) to (10)) until "MEM" appears.
The number button indication appears in the display.

Note
If you store a new station on a number button which already has a station registered, the previously stored station will be replaced by new one.

Receiving the memorised stations

1 Press (SOURCE) repeatedly to select the tuner.

2 Press (MODE) repeatedly to select the band.

3 Press the number button ((1) to (10)) where the desired station is stored.

If you cannot tune in a preset station

Push and release the SEEK/AMS control up or down to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Push the SEEK / AMS control up or down repeatedly until the desired station is received.

Note
If the automatic tuning stops too frequently, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Local" (local seek mode) is displayed. Then press (5) (→) to select "Local on." Press (SHIFT). Only the stations with relatively strong signals will be tuned in.

Tip
If you know the frequency of the station you want to listen to, push the SEEK/AMS control up or down and hold until the desired frequency appears (manual tuning).

If FM stereo reception is poor

— Monaural Mode

1 During radio reception, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "Mono" appears.

2 Press (5) (→) repeatedly until "Mono on" appears.
The sound improves, but becomes monaural ("ST" disappears).

3 Press (SHIFT).

To return to normal mode, select "Mono off" in step 2 above.

Changing the display items

Each time you press (DSPL), the item changes as follows:

Frequency ↔ Clock

After you select the desired item, the display will automatically change to the Motion Display mode after about a few seconds.
In the Motion Display mode, all the above items are scrolled in the display one by one in order.

Tip
The Motion Display mode can be turned off. (See "Changing the sound and display settings" on page 23).

RDS

Overview of the RDS function

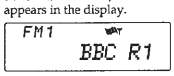
Radio Data System (RDS) is a broadcasting service that allows FM stations to send additional digital information along with the regular radio programme signal. Your car stereo uses this system to offer you a variety of services. Here are just a few: retuning to the same programme automatically, listening to traffic announcements, and locating a station by programme type.

Notes
- *Depending on the country or region, not all of the RDS functions are available.*
- *RDS may not work properly if the signal strength is weak or if the station you are tuned to is not transmitting RDS data.*

Displaying the station name

The name of the current station lights up in the display.

Select an FM station (page 13).
When you tune in an FM station that transmits RDS data, the station name appears in the display.



Note
The "" indication means that an RDS station is being received.*

Changing the display item

Each time you press (DSPL), the item changes as follows:

Station Name (Frequency) ↔ Clock

After you select the desired item, the display will automatically change to the Motion Display mode after about a few seconds.
In the Motion Display mode, all the above items are scrolled in the display one by one in order.

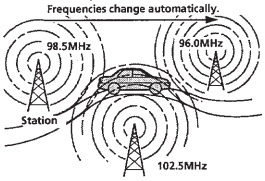
Tip
The Motion Display mode can be turned off. (See "Changing the sound and display settings" on page 23).

Note
"NO Name" appears if the received station does not transmit RDS data.

Retuning to the same programme automatically

— Alternative Frequencies (AF)

The Alternative Frequencies (AF) function automatically selects and retunes the station with the strongest signal in a network. By using this function, you can continuously listen to the same programme during a long-distance drive without having to retune the station manually.



1 Select an FM station (page 13).

2 Press (AF/TA) repeatedly until "AF on" appears.
The unit starts searching for an alternative station with a stronger signal in the same network.

Note
When there is no alternative station in the area or you do not need to search for an alternative station, turn the AF function off by pressing (AF/TA) repeatedly until "AF TA off" appears.

Changing the display items

Each time you press (AF/TA), the item changes as follows:

AF on → TA on → AF TA on* → AF TA off

** Select this to turn on both the AF and TA functions.*

Notes
- *If "NO AF" and the station name flash alternately, this indicates that the unit cannot find an alternative station in the network.*
- *If the station name starts flashing after selecting a station with the AF function on, this indicates that no alternative frequency is available. Push the SEEK/AMS control up or down while the station name is flashing (within eight seconds). The unit starts searching for another frequency with the same PI (Programme Identification) data ("PI seek" appears and no sound is heard). If the unit cannot find another frequency, "NO PI" appears, and the unit returns to the previously selected frequency originally.*

Listening to a regional programme

The "REG on" (regional on) function lets you stay tuned to a regional programme without being switched to another regional station. (Note that you must turn the AF function on.) The unit is factory preset to "REG on," but if you want to turn off the function, do the following.

1 During radio reception, press (SHIFT), then press (4) (PLAY MODE) repeatedly until "REG" appears.

2 Press (5) (→) repeatedly until "REG off" appears.

3 Press (SHIFT).
Note that selecting "REG off" might cause the unit to switch to another regional station within the same network.

To return to regional on, select "REG on" in step 2 above.

Note
This function does not work in the United Kingdom and in some other areas.

Local link function (United Kingdom only)

The Local Link function lets you select other local stations in the area, even though they are not stored on your number buttons.

1 Press a number button ((1) to (10)) that has a local station stored on it.

2 Within five seconds, press the number button of the local station again.

3 Repeat this procedure until the desired local station is received.

Listening to traffic announcements

The Traffic Announcement (TA) and Traffic Programme (TP) data let you automatically tune in an FM station that is broadcasting traffic announcements even if you are listening to other programme sources.

Press (AF/TA) repeatedly until "TA on" or "AF TA on" appears.
The unit starts searching for traffic information stations. "TP" appears in the display when the unit finds a station broadcasting traffic announcements. When the traffic announcement starts, "TA" flashes. The flashing stops when the traffic announcement is over.

Tip
If the traffic announcement starts while you are listening to another programme source, the unit automatically switches to the announcement and goes back to the original source when the announcement is over.

Note
"NO TP" flashes for five seconds if the received station does not broadcast traffic announcements. Then, the unit starts searching for a station that broadcasts traffic announcements.

To cancel the current traffic announcement

Press (AF/TA) or (SOURCE).
To cancel all traffic announcements, turn off the function by pressing (AF/TA) until "AF TA off" appears.

Presetting the volume of traffic announcements

You can preset the volume level of the traffic announcements beforehand so you won't miss the announcement. When a traffic announcement starts, the volume will be automatically adjusted to the preset level.

1 Select the desired volume level.

2 Press (AF/TA) for two seconds.
"TA" appears and the setting is stored.

Receiving emergency announcements

If an emergency announcement comes in while you are listening to the radio, the programme will automatically switch to it. If you are listening to a source other than the radio, the emergency announcements will be heard if you set AF or TA to on. The unit will then automatically switch to these announcements no matter which source you are listening to at the time.

Presetting the RDS stations with the AF and TA data

When you preset RDS stations, the unit stores each station's data as well as its frequency, so you don't have to turn on the AF or TA function every time you tune in the preset station. You can select a different setting (AF, TA, or both) for individual preset stations, or the same setting for all preset stations.

Presetting the same setting for all preset stations

1 Select an FM band (page 13).

2 Press (AF/TA) repeatedly to select either "AF on," "TA on" or "AF TA on" (for both AF and TA functions).
Note that selecting "AF TA off" stores not only RDS stations, but also non-RDS stations.

3 Press (SHIFT), then press (4) (PLAY MODE) repeatedly until "B.T.M" appears.

4 Press (5) (→) until "B.T.M" flashes.

5 Press (SHIFT).

Presetting different settings for each preset station

1 Select an FM band, and tune in the desired station.

2 Press (AF/TA) repeatedly to select either "AF on," "TA on" or "AF TA on" (for both AF and TA functions).

3 Press and hold the desired number button until "MEM" appears.
Repeat from step 1 for presetting other stations.

Tip
If you want to change the preset AF and/or TA setting after you tune in the preset station, you can do so by turning the AF or TA function on or off.

Recording the traffic announcements

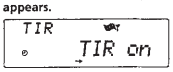
— Traffic Information Replay (TIR)

You can listen to the latest traffic announcements by recording them. The unit automatically records and stores up to eight traffic announcements. If the recording exceeds four minutes, the recorded announcements are updated, so you can always hear the latest information.
The TIR function turns on the unit automatically and records the traffic announcements for up to two hours before and after a preset time.

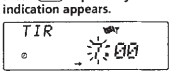
Presetting the time and the station

1 Press and hold (TIR) until "TIR" lights up in the display.

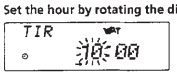
2 Press (5) (→) repeatedly until "TIR on" appears.



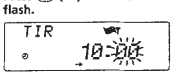
3 Press (TIR) repeatedly until the hour indication appears.



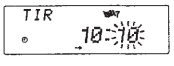
❶ Set the hour by rotating the dial.



❷ Press (5) (→) until the minute digits flash.



❸ Set the minute by rotating the dial.



4 Press (TIR).

5 Select the desired station by pressing the preset number button or pushing the SEEK/AMS control up or down.

6 Press (TIR) for two seconds to return to the original display.
◴ lights up.

The unit turns on automatically and stands by for traffic announcements for four hours (two hours before and after the preset time).
If the preset station does not broadcast the traffic announcement while searching, the unit starts searching for other traffic programme (TP) stations.

To cancel the TIR function

Select "TIR off" in step 2 above.

Tips
- *While the unit is recording the traffic announcement, ◴ and "TA" flash.*
- *If the unit still cannot find a TP station, it starts a new search every five minutes until it finds one.*
- *If you pull out the ignition key while the TIR function is on, "TIR on" and ◴ flash a few times.*

Notes
- *The unit also stands by for traffic announcements for two hours after you turn off the engine, as long as the TIR function is on.*
- *If you have a power aerial, it automatically extends every time the unit searches for a traffic programme station.*
  If you have a manual aerial, make sure that the aerial is fully extended.
- *If you do not use your car for about ten days, the TIR function will turn off automatically to avoid battery wear, even if the TIR function is on.*

Playing back the recorded traffic announcements

When there are recorded traffic announcements you have not listened to yet, ◴ flashes.

1 Press (TIR).
The latest traffic announcement is played back. To listen to the previous ones, press (TIR) or push the SEEK/AMS control up. To replay the announcements, push the SEEK/AMS control down.
"NO Data" appears if no traffic announcements were recorded.

2 Press (TIR) to return to the original programme.

Locating a station by programme type

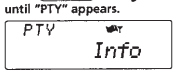
You can locate the station you want by selecting one of the programme types shown below.

Programme types	Display
News	News
Current Affairs	Affairs
Information	Info
Sports	Sport
Education	Educate
Drama	Drama
Culture	Culture
Science	Science
Varied	Varied
Popular Music	Pop M
Rock Music	Rock M
Easy Listening	Easy M
Light Classical	Light M
Classical	Classics
Other Music Type	Other M
Weather	Weather
Finance	Finance
Children's programmes	Children
Social Affairs	Social A
Religion	Religion
Phone In	Phone In
Travel	Travel
Leisure	Leisure
Jazz Music	Jazz
Country Music	Country
National Music	Nation M
Oldies Music	Oldies
Folk Music	Folk M
Documentary	Document
Not specified	None

Note
You cannot use this function in some countries where no PTY (Programme Type selection) data is available.

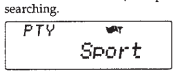
continue to next page →

1 Press (PTY/LIST) during FM reception until "PTY" appears.



The current programme type name appears if the station is transmitting the PTY data. "- - - - -" appears if the received station is not an RDS station, or if the RDS data has not been received.

2 Press (PTY/LIST) repeatedly until the desired programme type appears.
The programme types appear in the order shown in the above table. Note that you cannot select "None" (Not specified) for searching.

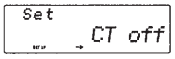


3 Push the SEEK/AMS control up or down.
The unit starts searching for a station broadcasting the selected programme type. When the unit finds the programme, the programme type appears again for five seconds.
"NO" and the programme type appear alternately for five seconds if the unit cannot find the programme type. It then returns to the previously selected station.

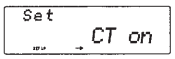
Setting the clock automatically

The CT (Clock Time) data from the RDS transmission sets the clock automatically.

1 Press (SHIFT), then press (3) (SET UP) repeatedly until "CT" appears.



2 Press (5) (→) repeatedly until "CT on" appears.
The clock is set.



3 Press (SHIFT) to return to the normal display.

To cancel the CT function

Select "CT off" in step 2 above.

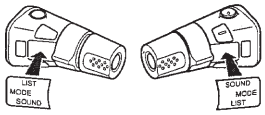
Notes
- *The CT function may not work even though an RDS station is being received.*
- *There might be a difference between the time set by the CT function and the actual time.*

Other Functions

You can also control an optional CD or MD unit with the rotary commander.

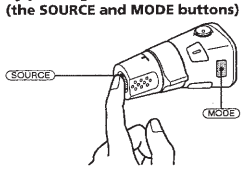
Labelling the rotary commander

Depending on how you mount the rotary commander, attach appropriate the labels as shown as shown in the illustration below.



Using the rotary commander

By pressing buttons (the SOURCE and MODE buttons)



Each time you press (SOURCE), the source changes as follows:

TUNER → CD → MD*

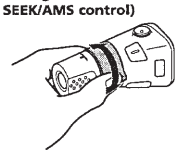
** If the corresponding optional equipment is not connected, this item will not appear.*

Pressing (MODE) changes the operation in the following ways;

- **Tuner : FM1 → FM2 → MW → LW**
- **CD unit : CD1 → CD2 → ...**
- **MD unit : MD1 → MD2 → ...**

Tip
When the POWER SELECT switch is set to position ❸, you can turn on this unit by pressing (SOURCE) on the rotary commander.

By rotating the control (the SEEK/AMS control)



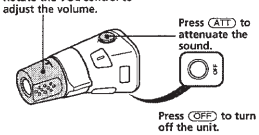
Rotate the control and release it to:
- Locate a specific track on a disc. Rotate and hold the control until you locate the specific point in a track, then release it to start playback.
- Tune in stations automatically. Rotate and hold the control to tune in a specific station.

By pushing in and rotating the control (the PRESET/DISC control)

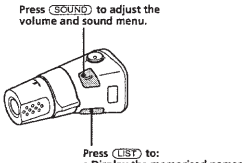
Push in and rotate the control to:
- Receive the stations memorised on the number buttons.
- Change the disc.

Other operations

Rotate the VOL control to adjust the volume.

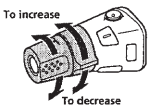


Press (SOUND) to adjust the volume and sound menu.

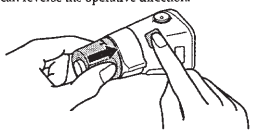


Changing the operative direction

The operative direction of controls is factory-set as shown below.



If you need to mount the rotary commander on the righthand side of the steering column, you can reverse the operative direction.



Press (SOUND) for two seconds while pushing the VOL control.

Tip
You can also change the operative direction of these controls with the unit (see "Changing the sound and display settings" on page 23).

Adjusting the sound characteristics

You can adjust the equalizer curve, listening position, cut-off frequency, bass, treble, balance and fader.
You can store the bass and treble levels independently for each source.

1 Select the item you want to adjust by pressing (SOUND) repeatedly.

VOL (volume) → EQ (equalizer curve)* →
POS (listening position)* →
SUB (subwoofer volume) →
CNW (crossover network)* →
BAS (bass) → TRE (treble) →
BAL (left-right) → FAD (rear-front)

** If the corresponding optional equipment is not connected, this item will not appear.*

2 Adjust the selected item by rotating the dial.
Adjust within three seconds after selecting the item. (After three seconds, the dial function reverts volume control.)

Attenuating the sound

Press (ATT) on the supplied rotary commander or optional wireless remote.
"ATT on" lights up for a second.

To restore the previous volume level, press (ATT) again.

Tip
The unit decreases the volume automatically when a telephone call comes in (Telephone ATT function).

Changing the sound and display settings

The following items can be set:
- Clock (page 7).
- CT (Clock Time) (page 20).
- D.Info (Dual Information)*1 – to display the clock and the play mode simultaneously (ON) or to display the information alternately (OFF).
- Amber/Green – to change the illumination colour to amber or green.
- Dimmer – to change the brightness of the display.
  - — Select "Auto" to dim the display only when you turn the interior lights on.
  - — Select "on" to dim the display.
  - — Select "off" to deactivate Dimmer.
- Contrast – to adjust the contrast if the indications in the display are not recognisable because of the unit's installed position.
- Beep – to turn the beep sounds on or off.
- RM (Rotary Commander) – to change the operative direction of the controls of the rotary commander.
  - — Select "norm" to use the rotary commander in the factory-set position.
  - — Select "rev" when you mount the rotary commander on the righthand side of the steering column.
- L.out (Line output)*2 (page 24)
- Loud (Loudness)*1 – to enjoy bass and treble even at low volumes. The bass and treble will be reinforced.
- LPF (Low Pass Filter)*1 (page 23)
- M.dspl (Motion Display) – to turn the motion display to 1, 2, or off.
- A.Scrl (Auto Scroll)*1 (pages 9, 25)

1 Press (SHIFT).

2 Press (3) (SET UP) repeatedly until the desired item appears.
Each time you press (3) (SET UP), the item changes as follows:

Clock → CT → D.Info*1 → Amber/Green → Dimmer → Contrast → Beep → RM → L.out*2 → Loud*1 → LPF*1 → M.dspl → A.Scrl*1

**1 When the radio is off, or when no CD, or MD is playing this item will not appear.*
**2 When the optional equalizer preamplifier is not connected, this item will not appear.*

Note
The displayed item will differ depending on the source.

3 Press (5) (→) to select the desired setting (Example: on or off).
For the "Contrast" setting, pressing (5) (→) makes the contrast higher, and pressing (2) (←) makes the contrast lower.

4 Press (SHIFT).
After the mode setting is complete, the display returns to normal playback mode.

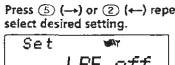
Adjusting the frequency of the subwoofer(s)

To match the characteristics of the connected subwoofer(s), you can cut out the unwanted high and middle frequency signals entering the subwoofer(s). By setting the cut-off frequency, the subwoofer(s) will output only low frequency signals for a clearer sound image.

1 Press (SOURCE) to select a source (radio, CD or MD).

2 Press (SHIFT), then press (3) (SET UP) repeatedly until "LPF" appears.

3 Press (5) (→) or (2) (←) repeatedly to select desired setting.



Each time you press (5) (→) or (2) (←), the cut-off frequency in the display changes as follows:

LPF off ⟷ LPF 80 Hz ⟷ LPF 120 Hz

4 Press (SHIFT).
When the frequency setting is complete, the display returns to the normal playback mode.

Adjusting the sound and frequency of the equalizer

This unit can also control an optional equalizer preamplifier.
This lets you add some effects to the sound field of the currently selected source.

For details, refer to the instructions manual supplied with the equalizer preamplifier.

Changing the line output level

You can change the line output level if you hear distortion or other noise.
When the optional equalizer preamplifier is connected, you can set this function.

1 Press (SHIFT), then press (3) (SET UP) until "L.out" appears.

2 Press (5) (→) to select the desired setting "L.out Hi" or "L.out Lo."

3 Press (SHIFT).

With Optional Equipment

CD/MD Unit

This unit can control a maximum of seven external CD/MD units in this configuration:
CD unit – maximum of five
MD unit – maximum of five
Any combination up to seven will work.
If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play a CD TEXT disc.

Playing a CD or MD

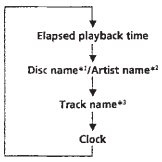
1 Press (SOURCE) repeatedly to select the CD or MD.

2 Press (MODE) until the desired unit appears.
CD/MD playback starts.

When a CD/MD unit is connected, all the tracks play from the beginning.

Changing the display item

Each time you press (DSPL) during CD, CD TEXT, or MD playback, the item changes as follows:



*1 *If you have not labelled the disc or if there is no disc name prerecorded on the MD, "NO D.Name" appears in the display.*
*2 *If you play a CD TEXT disc, the artist name appears in the display after the disc name. (Only for CD TEXT discs with the artist name.)*
*3 *If the track name of a CD TEXT disc or MD is not prerecorded, "NO T.Name" appears in the display.*

After you select the desired item, the display will automatically change to the Motion Display mode after about a few seconds.
In the Motion Display mode, all the above items are scrolled in the display one by one in order.

Tip
The Motion Display mode can be turned off. (See "Changing the sound and display settings" on page 23).

You can label CD and CD TEXT discs with a personalised name using the disc memo function; refer to "Labelling a CD" (page 29). However, if you use personalised labels, they will always take priority over the original CD TEXT information when such information is displayed.

Automatically scrolling a disc name — Auto Scroll

If the disc name, artist name, or track name on a CD TEXT disc or MD exceeds 10 characters and the Auto Scroll function is on, the following information will be automatically scrolled.
- *The disc name appears when the disc has changed (if the disc name is selected).*
- *The track name appears when the track has changed (if the track name is selected).*

If you press (DSPL) to change the display item, the disc or track name of the MD or CD TEXT disc is scrolled automatically whether you set the function on or off.

1 During playback, press (SHIFT).

2 Press (3) (SET UP) repeatedly until "A.Scrl" appears.

3 Press (5) (→) to select "A.Scrl on."

4 Press (SHIFT).

To cancel Auto Scroll, select "A.Scrl off" in step 3 above.

Note
For some CD TEXT discs with very characters, the following cases may happen:
— Some of the characters are not displayed.
— Auto Scroll does not work.

Tips
- *To manually scroll the long name of an MD or CD TEXT disc after activating the Auto Scroll function, press (SHIFT), then press (2) (←) (manual scroll).*
- *If you want to display the original CD TEXT information after labelling the CD TEXT disc with a personalised name, press (SHIFT), then press (5) (→).*

Locating a specific track — Automatic Music Sensor (AMS)

During playback, push the SEEK/AMS control up or down and release for each track you want to skip.

To locate succeeding tracks
To locate preceding tracks

Locating a specific point in a track — Manual Search

During playback, push the SEEK/AMS control up or down and hold. Release when you have found the desired point.

To search forward
To search backward

Locating a disc by disc number — Direct Disc Selection

Press the number button (1 to 10) that corresponds with the desired disc number.
The desired disc in the current unit begins playback.

Playing tracks repeatedly — Repeat Play

You can select:
- Repeat 1 – to repeat a track.
- Repeat 2 – to repeat a disc.

1 During CD playback, press (SHIFT).

2 Press (7) (REP) repeatedly until the desired setting appears.

Repeat 1 → Repeat 2 → Repeat off ←

Repeat Play starts.

3 Press (SHIFT).

To return to normal playback mode, select "Repeat off" in step 2 above.

Playing tracks in random order — Shuffle Play

You can select:
- Shuf 1 – to play the tracks on the current disc in random order.
- Shuf 2 – to play the tracks in the current unit in random order.
- Shuf All – to play all the tracks in all the units in random order.

1 During playback, press (SHIFT).

2 Press (8) (SHUF) repeatedly until the desired setting appears.

Shuf 1 → Shuf 2 → Shuf All* → Shuf off ←

** "Shuf All" is available for CD changer(s) only.*

Shuffle Play starts.

3 Press (SHIFT).

To return to normal playback mode, select "Shuf off" in step 2 above.

Creating a programme — Programme Memory (For a CD/MD unit with the programme memory function)

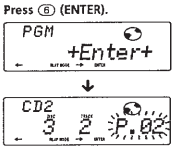
You can play tracks in any order you want by creating and storing programmes in the unit's memory. You can select up to 24 tracks for a programme. You can store the programmes in memory.

1 During CD playback, press (SHIFT), then press (4) (PLAY MODE) for two seconds.
Programme edit mode

If you have labelled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P" above.

2 Select the track you want.
❶ Press (SOURCE) repeatedly to select CD or MD.
❷ Press (MODE) repeatedly to select the unit.
❸ Press (SHIFT), then press the number button to select the disc.
❹ Press (SHIFT).
❺ Push the SEEK/AMS control up or down to select the track.

3 Press (6) (ENTER).



4 To continue entering tracks, repeat steps 2 and 3.

5 When you finish entering tracks, press (4) (PLAY MODE) for two seconds.

6 Press (SHIFT).

Notes
- *"*Wait*" appears in the display while the unit is reading the data, or when a disc has not been put into the unit.*
- *"*Mem Full*" appears in the display when you try to enter more than 24 tracks into a programme.*

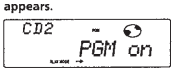
Playing the stored programme

Changing the disc order in the unit will not affect programme memory play.

1 Press (SHIFT).

2 Press (4) (PLAY MODE) repeatedly until "PGM" appears.

3 Press (5) (→) repeatedly until "PGM on" appears.



Programme Play starts.

4 Press (SHIFT).

To return to normal playback mode, select "PGM off" in step 3 above.

Notes
- *If you press a number button during programme memory play, programme memory play is interrupted, and playback of the selected disc starts.*
- *"NO Data" appears in the display if no track is stored in the programme.*
- *If a track stored in the programme memory is not in the disc magazine, the track will be skipped.*
- *When the disc magazine contains no tracks stored in the programme memory, or when the programme information has not been loaded yet, "Not ready" appears.*

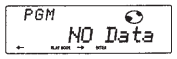
Erasing an entire programme

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.

If you have labelled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P" above.

2 Press (2) (←) repeatedly until "DEL" appears.

3 Press (6) (ENTER) for two seconds.



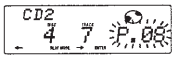
The entire programme is erased.

4 When you finish erasing programmes, press (4) (PLAY MODE) for two seconds.

5 Press (SHIFT).

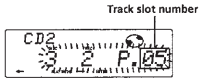
Adding tracks to a programme

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.



If you have labelled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P" above.

2 Press (2) (←) or (5) (→) to select the track slot number where you want to insert a track.



3 Push the SEEK/AMS control up or down to select the track you want to insert.

4 Press (6) (ENTER) to enter the track.
The current track is inserted in that slot number and the succeeding tracks shift down.
To continue inserting tracks, repeat steps 2 through 4.

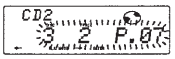
Note
*When a 24 slots have been filled, "*Mem Full*" appears in the display, and you cannot insert more tracks.*

5 When you finish inserting tracks, press (4) (PLAY MODE) for two seconds.

6 Press (SHIFT).

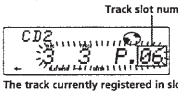
Erasing tracks in a programme

1 Press (SHIFT), then press (4) (PLAY MODE) for two seconds.



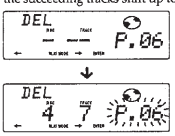
If you have labelled the disc, the bank edit mode appears. Press (4) (PLAY MODE) to display "P" above.

2 Press (2) (←) or (5) (→) to select the track you want to erase.



The track currently registered in slot 6.

3 Press (6) (ENTER) for two seconds.
When you erase a track from a slot number, the succeeding tracks shift up to fill the gap.



4 To continue erasing tracks, repeat steps 2 and 3.

5 When you finish erasing tracks, press (4) (PLAY MODE) for two seconds.

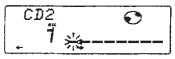
6 Press (SHIFT).

Labelling a CD — Disc Memo

(For a CD unit with the custom file function)

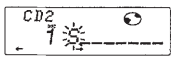
You can label each disc with a personalised name. You can enter up to eight characters for a disc. If you label a CD, you can locate the disc by name (page 30) and select specific tracks for playback (page 31).

1 During CD playback, press (PTY/LIST) for two seconds.



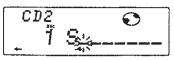
2 Enter the characters.

❶ Rotate the dial clockwise to select the desired characters.
(A → B → C → ··· Z → 0 → 1 → 2 → ··· 9 → + → − → * → / → \ → > → < → . → _)



If you rotate the dial counterclockwise, the characters appear in the reverse order.
If you want to put a blank space between characters, select "_" (under-bar).

❷ Press (5) (→) after locating the desired character.
The flashing cursor moves to the next space.



If you press (2) (←), the flashing cursor moves to the left.

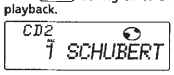
❸ Repeat steps ❶ and ❷ to enter the entire name.

3 To return to normal CD playback mode, press (PTY/LIST) for two seconds.

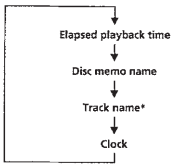
Tip
To erase or correct a name enter "_" (under-bar) for each character.

Displaying the disc memo name

Press (DSPL) during CD or CD TEXT disc playback.



Each time you press (DSPL) during CD or CD TEXT disc playback, the item changes as follows:



* *If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you playback a CD TEXT disc.*

After you select the desired item, the display will automatically change to the Motion Display mode after about a few seconds.
In the Motion Display mode, all the above items are scrolled in the display one by one in order.

Tip
The Motion Display mode can be turned off. (See "Changing the sound and display settings" on page 23).

Erasing the disc memo

1 Press (SOURCE) repeatedly to select CD.

2 Press (MODE) repeatedly to select the CD unit.

3 Press (PTY/LIST) for two seconds.

4 Press (DSPL) for two seconds.

5 Rotate the dial to select the name you want to erase.

6 Press (6) (ENTER) for two seconds.
The name is erased.
Repeat steps 5 and 6 if you want to erase other names.

7 Press (PTY/LIST) for two seconds.
The unit returns to normal CD playback mode.

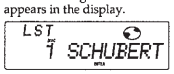
Note
When the personalised label is erased, the original CD TEXT information will appear in the display.

Locating a disc by name

— List-up (For a CD unit with the custom file function or MD unit)

You can use this function for discs that have been assigned a custom name. For more information on disc names, refer to "Labelling a CD" (page 29).

1 During CD playback, press (PTY/LIST).
The name assigned to the current disc appears in the display.



When you assign a disc memo label to a CD TEXT disc, it takes priority over the original CD TEXT information.

2 Press (PTY/LIST) repeatedly until you find the desired disc.

3 Press (6) (ENTER) to play back the disc.

Notes
- *After a disc name has been displayed for five seconds, the display returns to normal playback mode. To turn off the display, press (DSPL).*
- *The track names are not displayed during MD or CD TEXT disc playback.*
- *If there are no discs in the magazine, "NO Disc" appears in the display.*
- *If a disc has not been assigned a custom file, "*********" appears in the display.*
- *If the disc information has not been read by the unit, "?" appears in the display. To load the disc, first press the number button, then choose the disc that has not been loaded.*
- *The information appears only in upper case. There are also some letters which cannot be displayed (during MD or CD TEXT disc playback).*

Connections

Cautions

- This unit is designed for negative earth 12 V DC operation only.
- Be careful not to pinch any wires between a screw and the body of the car or this unit or between any moving parts such as the seat railing, etc.
- Connect the power connecting cord Ⓑ to the unit and speakers before connecting it to the auxiliary power connector.
- **Run all earth wires to a common earth point.**
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in combination with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual components' fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.

If your car has no accessory position on the ignition key switch — POWER SELECT switch

The front panel illumination is factory set to be turned on even while the unit is not in use. However, this setting may cause some car battery wear **if your car has no accessory position on the ignition key switch.** To avoid this battery wear, **set the POWER SELECT switch located on the bottom of the unit to the Ⓝ position, then press the reset button.** The illumination is reset to stay off while the unit is not in use.

Notes

- *The caution alarm for the front panel and TIR indicator is not activated when the POWER SELECT switch is set to the Ⓝ position.*
- *Do not use excessive force when changing the POWER SELECT switch.*

Inverter

Cautions

- *Install the inverter far away from the unit using double-side adhesive tape or something similar.*
- *Be sure not to mount the inverter under a mat or in a place exposed to splashing water of air conditioner. It may cause electric shock or damage to the unit.*

Note

If the inverter's cord is pinched, the display indications may not appear.

Notes of connection example

Notes on the control leads

- *The power aerial control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the AF (Alternative Frequency), the TA (Traffic Announcement) or TIR (Traffic Information Replay) function.*
- *A power aerial without a relay box cannot be used with this unit.*

Warning

If you have a power aerial without a relay box, connecting this unit with the supplied power connecting cord Ⓑ may damage the aerial.

Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition switch is turned off.

Notes on speaker connection

- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Conexiones

Precauciones

- Esta unidad ha sido diseñada para alimentarse con 12 V CC, negativo a masa, solamente.
- Tenga cuidado de no atrapar ningún cable entre algún tornillo y la carrocería del automóvil o esta unidad o entre las partes móviles, como por ejemplo los raíles del asiento, etc.
- Conecte el cable de conexión de alimentación Ⓑ a la unidad y los altavoces antes de conectarlo al conector de alimentación auxiliar.
- **Conecte todos los conductores de puesta a masa a un punto común.**
- Conecte el cable amarillo a un circuito libre del automóvil de potencia nominal superior a la del fusible de la unidad. Si conecta esta unidad en combinación con otros componentes estéreo, la potencia nominal del circuito del automóvil a los que dichos componentes estén conectados debe ser superior a la suma de la potencia nominal del fusible de los componentes. Si no existen circuitos de automóvil de potencia nominal tan alta como la del fusible de la unidad, conecte ésta directamente a la batería. Si no hay circuitos de automóvil disponibles para conectar esta unidad, conecte la misma a un circuito de automóvil de potencia nominal superior a la del fusible de la unidad de forma que no se desactiven otros circuitos si el fusible de dicha unidad se funde.

Si el automóvil no dispone de posición para accesorios en la llave de encendido

— Selector POWER SELECT

La iluminación del panel frontal ha sido ajustada en fábrica para que esté activada aunque la unidad no se encuentre en funcionamiento. Sin embargo, este ajuste puede provocar cierta descarga de la batería del automóvil **si éste no dispone de posición para accesorios en la llave de encendido.** Para evitar esto, **ponga el selector POWER SELECT, situado en la base de la unidad, en la posición Ⓝ y, después, pulse el botón de reposición.** La iluminación estará desactivada cuando la unidad no se encuentre en funcionamiento.

Notas

- *La alarma de precaución para el panel frontal y el indicador TIR no se activará si el selector POWER SELECT está ajustado en la posición Ⓝ.*
- *No emplee excesiva fuerza al cambiar el selector POWER SELECT.*

Inversor

Precauciones

- *Instale el inversor alejado de la unidad utilizando cinta adhesiva de dos caras o algo similar.*
- *Cerciórese de no montar el inversor debajo de una alfombrilla ni en un lugar expuesto a salpicaduras de agua de un acondicionador de aire. Esto puede provocar descargas eléctricas o daños a la unidad.*

Nota

Si el cable del inversor quedase pillado, es posible que no apareciensen las indicaciones del visor.

Notas de ejemplo de conexiones

Notas sobre conductores de control

- *El conductor de control (azul) de la antena motorizada suministra + 12 V CC al activar el sintonizador o la función AF (frecuencias alternativas), TA (anuncios de tráfico) o TIR (repetición de información sobre el tráfico).*
- *Con esta unidad no podrá utilizarse una antena motorizada sin caja de relés.*

Advertencia

Si dispone de una antena motorizada sin dispositivo de relé, la conexión de esta unidad con el cable de conexión de alimentación Ⓑ suministrado puede dañar la antena.

Conexión para protección de la memoria

Si conecta el conductor de entrada amarillo, el circuito de la memoria recibirá siempre alimentación, incluso aunque ponga la llave de encendido en la posición de apagado.

Notas sobre la conexión de los altavoces

- *Antes de conectar los altavoces, desconecte la alimentación de la unidad.*
- *Utilice altavoces con una impedancia de 4 a 8 ohmios, y con la potencia máxima admisible adecuada, ya que de lo contrario podría dañarlos.*
- *No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los del altavoz izquierdo a los del derecho.*
- *No intente conectar los altavoces en paralelo.*
- *No conecte altavoces activos (con amplificadores incorporados) a los terminales de altavoces de la unidad. Si lo hiciese, podría dañar tales altavoces. Por lo tanto, cerciórese de conectar altavoces pasivos a estos terminales.*

Ligações

Advertência

- Este aparelho foi concebido para funcionar somente com corrente contínua de 12 V com negativo à massa.
- Tenha cuidado para que os fios não fiquem entalados entre os parafusos e a carroçaria do automóvel ou a caixa do aparelho nem entre as peças móveis, por exemplo, as calhas dos bancos, etc.
- Ligue o cabo de alimentação de corrente Ⓑ ao aparelho e aos alifalantes antes de o ligar ao conector de corrente auxiliar.
- **Ligue todos os fios de terra num ponto de massa comum.**
- Ligue o cabo amarelo a um circuito eléctrico livre do automóvel, cuja tensão seja superior à dos fusíveis do aparelho. Se ligar este aparelho em série com outros componentes estéreo, a tensão do circuito eléctrico do automóvel onde os ligar tem de ser superior à soma das tensões dos fusíveis de todos os componentes individuais. Se não houver nenhum circuito eléctrico do automóvel com uma tensão tão elevada como a dos fusíveis do aparelho, ligue-o directamente à bateria. Se não estiver disponível nenhum circuito eléctrico do automóvel para ligação deste aparelho, ligue-o a um circuito eléctrico do automóvel com uma potência nominal superior à dos fusíveis do aparelho, de tal modo que, se o aparelho rebentar os fusíveis respectivos, nenhum outro circuito seja cortado.

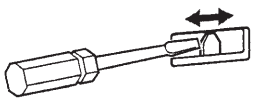
Se o seu automóvel não estiver equipado com uma chave de ignição com posição acessórios

— Interruptor POWER SELECT

A iluminação do painel frontal é regulada na fábrica para se manter acesa, mesmo quando o aparelho não estiver ligado. No entanto, esta regulação pode provocar a descarga da bateria **se o aparelho for utilizado em automóveis sem chave de ignição com posição acessórios.** Para evitar a descarga da bateria, **regule o interruptor POWER SELECT, situado na base do aparelho, para a posição Ⓝ. Em seguida, carregue no botão de reinicialização.** A iluminação é regulada para ficar apagada enquanto o aparelho estiver desligado.

Notas

- *O alarme de aviso do painel frontal e o indicador TIR não são activados se o selector POWER SELECT estiver colocado na posição Ⓝ.*
- *Não faça demasiada força quando mudar a posição do selector POWER SELECT.*



Inversor

Advertência

- *Instale o inversor longe do aparelho utilizando fita autocolante com duas faces ou qualquer outro material semelhante.*
- *Não monte o inversor debaixo de tapetes ou num local exposto a salpicos de água do ar condicionado, pois se o fizer, pode provocar choques eléctricos ou danificar o aparelho.*

Nota

Se o cabo do inversor estiver preso, as indicações do visor podem não aparecer.

Notas sobre o exemplo de ligação

Notas sobre os fios de controlo

- *O fio de controlo da antena eléctrica (azul) fornece +12 V CC quando ligar o sintonizador ou quando activar as funções AF (frequência alternativa), TA (Informações de trânsito) ou TIR (Repetição da informações de trânsito).*
- *Uma antena motorizada sem um relé não pode ser utilizada com este aparelho.*

Atenção

Se a antena eléctrica não tiver uma caixa de relé, o facto de ligar esta aparelho com a cabo de alimentação Ⓑ fornecido, pode provocar danos na antena.

Ligação para alimentação contínua da memória

Quando, o fio amarelo de entrada de alimentação for ligado, os circuitos de memória ficarão com alimentação contínua, mesmo se a chave de ignição estiver desligada.

Notas sobre a ligação dos altifalantes

- *Antes de ligar os altifalantes, desligue o aparelho.*
- *Utilize altifalantes com impedância de 4 a 8 ohm, e com capacidade admissível de potência adequada. Caso contrário, os altifalantes poderão sofrer avarias.*
- *Não ligue os terminais do sistema de altifalantes ao chassis do automóvel, e não ligue os terminais do altifalante direito aos terminais do altifalante esquerdo.*
- *Não tente ligar os altifalantes em paralelo.*
- *Não ligue nenhum sistema de altifalantes activos (com amplificadores incorporados) aos terminais dos altifalantes do aparelho. Caso o faça, poderá avariar o sistema de altifalantes activos. Portanto, não se esqueça de ligar altifalantes passivos a estes terminais.*

Anslutning

Säkerhetsföreskrifter

- Denna bilstereo är endast avsedd för anslutning till ett negativt jordat, 12 V bilbatteri.
- Var noga med att inga kablar kläms mellan någon skruv eller att de blir klämda mellan rörliga delar som t.ex. bilsätet.
- Anslut strömkabeln Ⓑ till enheten och högtalarna innan du ansluter den till den yttre strömanslutning.
- **Dra samtliga jordledningar till en och samma jordningspunkt.**
- Anslut den gula kabeln till en ledig bilkrets med ett högre amperetal än enhetens. Om du seriekopplar enheten till andra stereokomponenter måste den bilkrets de kopplas till ha ett högre amperetal än summan av de enskilda delarnas amperestyrka. Om det inte finns några bilkretsar med en så hög amperestyrka som enhetens ska du ansluta enheten direkt till batteriet. Om inga bilkretsar finns för anslutning till enheten ska du ansluta enheten till en bilkrets med ett högre amperetal än enhetens än enhetens styrka så att inga andra kretsar avbryts om enhetens säkring smälter.

Montera bilstereon i en bil vars tändlås inte har något strömläge

— Omkopplaren POWER SELECT

Innan bilstereon levererades från fabriken ställdes belysningen i teckenfönstret in så att den lyser också när bilstereon inte används. Detta kan emellertid orsaka urladdning av batteriet när du använder bilstereon **i en bil, vars tändlås saknar läget ACC (strömläge). Skjut omkopplaren POWER SELECT på bilstereons undersida till läge Ⓝ, och tryck sedan på återställningsknappen** för att undvika att bilbatteriet laddas ur. Nu lyser inte längre belysningen i teckenfönstret när bilstereon inte används.

Obsevera

- *Varningssignalen till frontpanelens TIR-indikator ljuder inte när omkopplaren POWER SELECT står i läge Ⓝ.*
- *Ta inte i för mycket när du ställer om POWER SELECT-omkopplaren.*

Växelriktare

Säkerhetsföreskrifter

- *Installera växelriktaren långt bort från enheten med dubbelhäftad tejp eller liknande.*
- *Montera inte växelriktaren under en matta eller en plats där det är risk för vattenstänk från luftkonditionering. Det kan leda till att enheten skadas eller medföra risk för elektriska stötar.*

Observera

Om växelriktarens kabel har kommit i kläm, visas inga indikationer i teckenfönstret.

Att observera angående anslutningsexemplen

Att observera angående de olika styrkablarna

- *Motorantennens styrkabel (blå) leder + 12 volts likström när du slår på radion eller när du aktiverar mottagning av alternativa frekvenser AF, mottagning av trafikmeddelanden TA eller uppspelning av trafikinformation TIR.*
- *En motorantenn utan styrreläåosa kan inte anslutas till denna bilstereo.*

Varning

Om du har en motorantenn utan reläåosa kan antennen skadas om du ansluter enheten med den medföljande strömkabeln Ⓑ.

Anslutning för minnesstöd

När du anslutit den gula, ingående strömkabeln försörjs minneskretsen med ström hela tiden, även när tändlåset slås ifrån.

Att observera angående högtalarnas anslutning

- *Slå av bilstereon innan du ansluter högtalarna.*
- *Anslut endast högtalare, vars impedans varierar från 4 till 8 ohm och som har tillräcklig effekthanteringskapacitet för att skydda högtalarna mot skador.*
- *Anslut inte något av högtalaruttagen till bilens chassi. Anslut inte heller uttagen på höger högtalare till uttagen på vänster högtalare.*
- *Anslut inte högtalarna parallellt.*
- *Anslut inte aktiva högtalare (med inbyggda slutsteg) till bilstereons högtalaruttag, eftersom de kan skada de aktiva högtalarna. Var noga med att bara ansluta passiva högtalare till dessa uttag.*

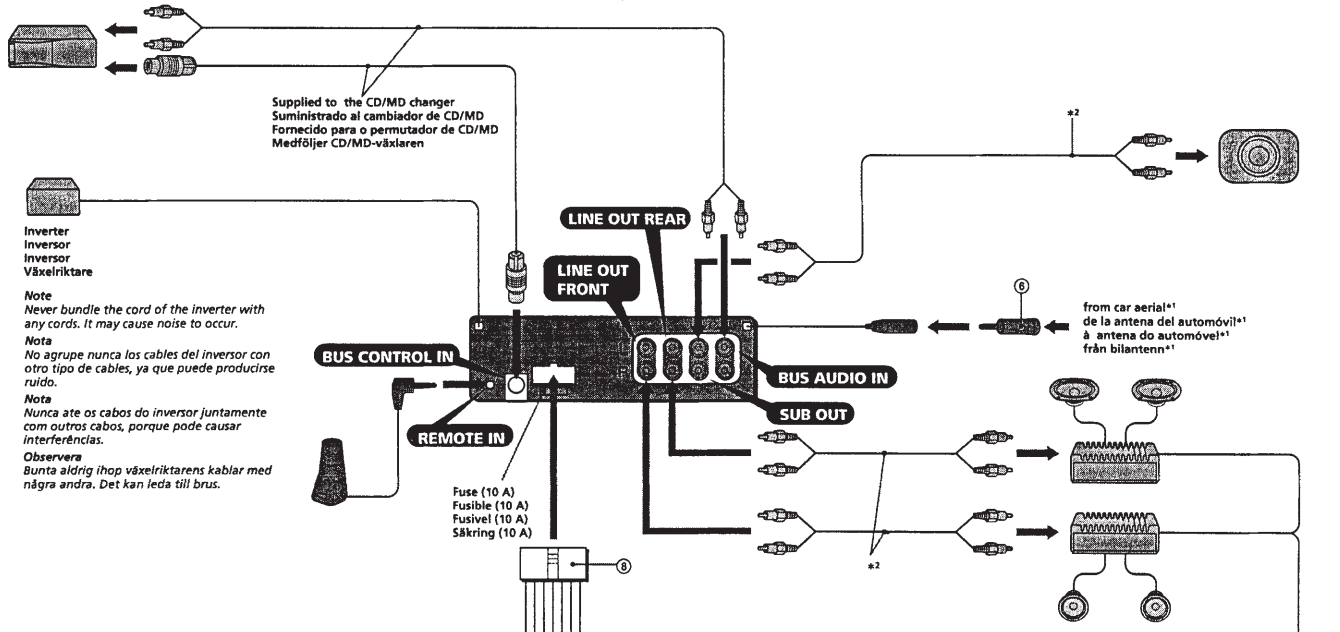
Connection example
Ejemplo de conexiones
Exemplo de ligações
Anslutningarna enligt exemplet

*1 *Note for the aerial connecting*
If your car aerial is an ISO (International Organization for Standardization) type, use the supplied adapter ⑥ to connect it. First connect the car aerial to the supplied adapter, then connect it to the aerial jack of the master unit.
*2 *RCA pin cord (not supplied)*

*1 *Nota sobre la conexión de la antena*
Si la antena del automóvil es del tipo ISO (International Organization for Standardization), emplee el adaptador suministrado ⑥ para conectarla.
En primer lugar, conecte la antena del automóvil al adaptador suministrado y, a continuación, a la toma de antena de la unidad principal.
*2 *Cable con clavijas RCA (no suministrado)*

*1 *Nota referente à ligação da antena*
Se a antena do automóvel for uma antena de tipo ISO (International Organization for Standardization), utilize o adaptador fornecido ⑥ para fazer a ligação respectiva.
Ligue primeiro a antena do automóvel ao adaptador fornecido e depois à ficha tipo jack de antena do sistema principal.
*2 *Cabo de terminais RCA (não fornecido)*

*1 *Angående antennanslutning*
Om motorantennen är av ISO-typ (International Organization for Standardization), använder du medföljande adapter ⑥ för att ansluta den.
Anslut först motorantennen till medföljande adapter och därefter till antennuttaget på huvudenheten.
*2 *Kabel med RCA-kontakter (medföljer inte)*



Note
Never bundle the cord of the inverter with any cords. It may cause noise to occur.
Nota
No agrupe nunca los cables del inversor con otro tipo de cables, ya que puede producirse ruido.
Nota
Nunca ate os cabos do inversor juntamente com outros cabos, porque pode causar interferências.
Observera
Bunta aldrig ihop växelriktarens kablar med några andra. Det kan leda till brus.

WARNING
Auxiliary power connectors may vary depending on the car. Be sure to check the power connection diagram. Improper connections may damage your car. If the supplied power connecting cord can not be used with your car, consult your nearest Sony dealer.

ADVERTENCIA
Los conectores de alimentación auxiliar pueden variar en función del automóvil. Asegúrese de consultar el diagrama de conexión de alimentación. Las conexiones incorrectas pueden dañar el automóvil. Si no es posible utilizar con el automóvil el cable de conexión de alimentación suministrado, póngase en contacto con el proveedor Sony más próximo.

ATENÇÃO
Os conectores de corrente auxiliares podem variar de carro para carro. Não se esqueça de verificar o diagrama de ligação de corrente fornecido com o aparelho. As ligações mal executadas podem danificar o seu carro. Se não puder utilizar o cabo de alimentação fornecido no seu carro, contacte o agente Sony da sua zona.

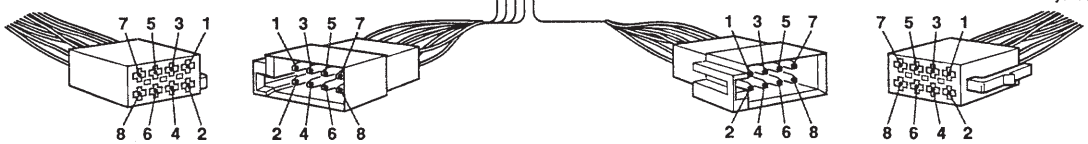
VARNING
Typen av yttre strömanslutning varierar från bil till bil. Kontrollera kopplingsschemat som medföljer enheten så att du ansluter på rätt sätt. Felaktig anslutning kan skada bilen. Kontakta närmaste Sony-återförsäljare om den medföljande strömkabeln inte passar till din bil.

Blue/white striped
Con raya azul/blanca
Azul com listras brancas
Blå/vit-randig
AMP REM
Max. supply current 0.3 A
Corriente máx. de alimentación de 0,3 A
Corrente máxima de 0,3 A
Maximal strömtillförsel 0,3 A

Light blue
Azul celeste
Azul claro
Ljusblå
ATT
to the interface cable of a car telephone
al cable de interfaz de un teléfono para automóvil
Cabo de interface do telemóvel
till mobiltelefonens gränssnittskabel

to a car's speaker connector
a un conector de altavoces del automóvil
verso un connettore del diffusore dell'auto
till bilens högtalaranslutning

to a car's auxiliary power connector
a un conector de alimentación auxiliar del automóvil
a um conector de alimentação auxiliar do automóvel
till bilens yttre strömanslutning.



4	Yellow Amarillo Amarelo Gul	continuous power supply suministro de alimentación continua alimentação de corrente contínua kontinuerlig strömförsörjning	7	Red Rojo Vermelho Röd	switched power supply suministro conmutado de alimentación alimentação de corrente comutada switchad strömförsörjning
5	Blue Azul Azul Blå	power aerial control control de antena motorizada antena eléctrica styrström för motorantenn	8	Black Negro Preto Svart	earth toma de tierra Terra jord
6	Orange/ White Naranja/ blanco Cor de laranja/ branco Orange/ vit	switched illumination power supply fuente de alimentación de iluminación conmutada fonte de alimentação comutada para iluminação switchad strömförsörjning till belysning			

Positions 1, 2 and 3 do not have pins.
Las posiciones 1, 2 y 3 no disponen de pines.
As posições 1, 2 e 3 não têm pinos.
Positionerna 1, 2 och 3 saknar stift.

1	Purple Púrpura	+	Speaker, Rear, Right Altavoz, parte posterior, derecho Altifalante, Parte de trás, Direito Högtalare, bakre, höger	5	White Blanco Branco Vit	+	Speaker, Front, Left Altavoz, parte frontal, izquierdo Altifalante, Parte da frente, Esquerdo Högtalare, främre, vänster
2	Violeta Morklila	–	Speaker, Rear, Right Altavoz, parte posterior, derecho Altifalante, Parte de trás, Direito Högtalare, bakre, höger	6		–	Speaker, Front, Left Altavoz, parte frontal, izquierdo Altifalante, Parte da frente, Esquerdo Högtalare, främre, vänster
3	Grey Gris Cinza Grå	+	Speaker, Front, Right Altavoz, parte frontal, derecho Altifalante, Parte da frente, Direito Högtalare, främre, höger	7	Green Verde Verde Grön	+	Speaker, Rear, Left Altavoz, parte posterior, izquierdo Altifalante, Parte de trás, Esquerdo Högtalare, bakre, vänster
4		–	Speaker, Front, Right Altavoz, parte frontal, derecho Altifalante, Parte da frente, Direito Högtalare, främre, höger	8		–	Speaker, Rear, Left Altavoz, parte posterior, izquierdo Altifalante, Parte de trás, Esquerdo Högtalare, bakre, vänster

Negative polarity positions 2, 4, 6, and 8 have striped cords.
Las posiciones de polaridad negativa 2, 4, 6 y 8 tienen cables con raya.
As posições 2, 4, 6 e 8 (polaridade negativa) têm cabos às riscas.
De negativa polpositionerna 2, 4, 6 och 8 har randiga kablar.

Power connection diagram

Auxiliary power connector may vary depending on the car. Check your car's auxiliary power connector diagram to make sure the connections match correctly. There are three basic types (illustrated below). You may need to switch the positions of the red and yellow leads in the car stereo's power connecting cord.
After matching the connections and switched power supply leads correctly, connect the unit to the car's power supply. If you have any questions and problems connecting your unit that are not covered in this manual, please consult the car dealer.

Diagrama de conexión de alimentación

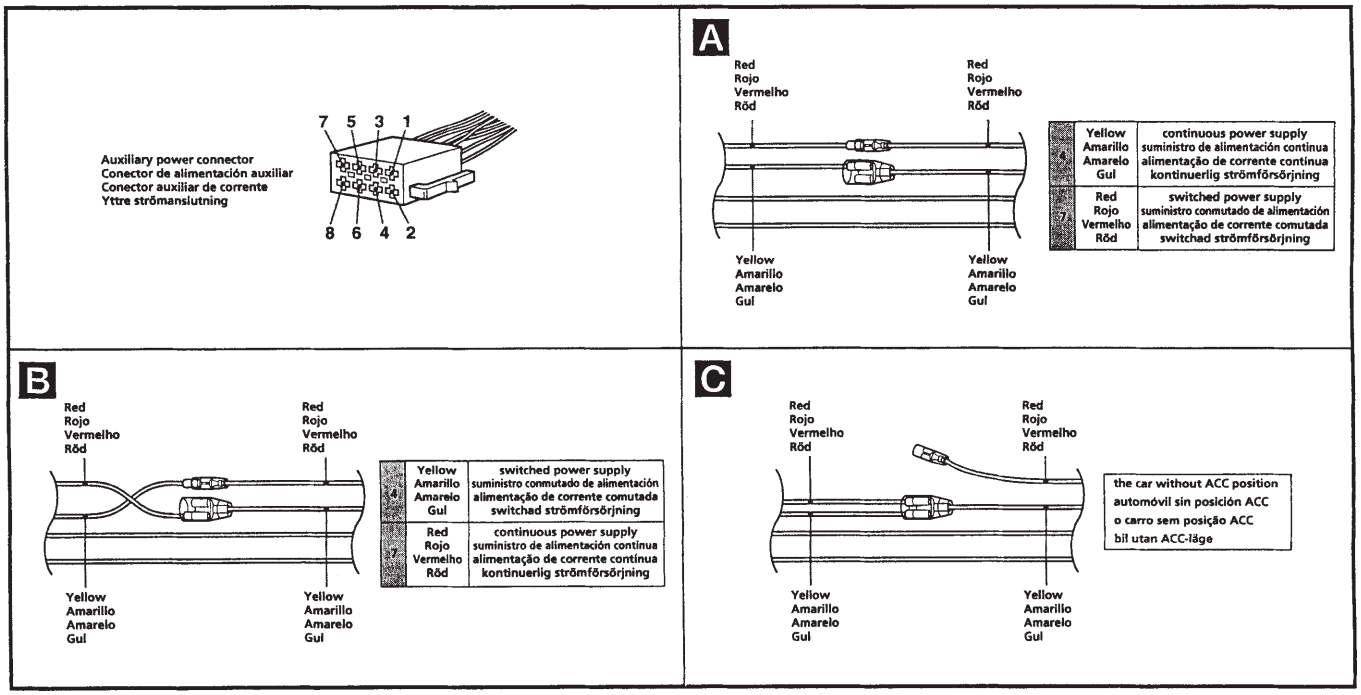
El conector de alimentación auxiliar puede variar en función del automóvil. Compruebe el diagrama del conector de alimentación auxiliar del automóvil para asegurarse de que las conexiones coinciden correctamente. Existen tres tipos básicos, ilustrados a continuación. Es posible que sea necesario cambiar las posiciones de los cables rojo y amarillo del cable de conexión de alimentación del sistema estéreo del automóvil.
Después de hacer coincidir correctamente las conexiones y los cables de alimentación conmutada, conecte la unidad al suministro de alimentación del automóvil. Si desea realizar alguna consulta o solucionar algún problema referentes a la conexión de la unidad que no aparezcan en este manual, consulte con el concesionario automovilístico.

Diagrama de ligação de corrente

O conector auxiliar de corrente pode variar de carro para carro. Verifique o diagrama do conector auxiliar de corrente para se certificar de que as ligações estão bem feitas. Existem três tipos de conectores (ilustrados abaixo). Pode ter que mudar as posições dos cabos vermelho e amarelo do cabo de alimentação do sistema estéreo do automóvel.
Depois de fazer a correspondência entre as ligações e os pinos de alimentação de corrente comutada, ligue o aparelho fonte de alimentação do carro. Se tiver alguma dúvida ou problema relacionado com o aparelho que não esteja incluído neste manual, consulte o concessionário.

Kopplingsschema

Typen av yttre strömanslutning varierar från bil till bil. Kontrollera kopplingsschemat så att du ansluter på rätt sätt. Det finns tre grundläggande anslutningstyper (visas nedan). Du kan eventuellt behöva byta plats på de röda och gula kablarna i bilstereons strömanslutning.
Koppla kablarna för kontinuerlig respektive switchad strömförsörjning på rätt sätt och anslut sedan enheten till bilens strömanslutning. Om du får problem eller har frågor som inte besvaras i den här bruksanvisningen kan du kontakta biláterförsäljaren.


Auxiliary power connector
Conector de alimentación auxiliar
Conector auxiliar de corrente
Yttre strömanslutning
7 5 3 1
8 6 4 2
A
Red
Rojo
Vermelho
Röd
Yellow
Amarillo
Amarelo
Gul
4 Yellow Amarillo Amarelo Gul — continuous power supply / suministro de alimentación continua / alimentação de corrente continua / kontinuerlig strömförsörjning
7 Red Rojo Vermelho Röd — switched power supply / suministro conmutado de alimentación / alimentação de corrente comutada / switchad strömförsörjning
B
4 Yellow Amarillo Amarelo Gul — switched power supply / suministro conmutado de alimentación / alimentação de corrente comutada / switchad strömförsörjning
7 Red Rojo Vermelho Röd — continuous power supply / suministro de alimentación continua / alimentação de corrente continua / kontinuerlig strömförsörjning
C
the car without ACC position
automóvil sin posición ACC
o carro sem posição ACC
bil utan ACC-läge

Connection diagram

Diagrama de conexiones

Diagrama de ligações

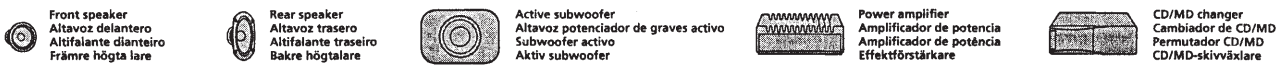
Kopplingsschema

Equipment used in illustrations (not supplied)

Equipo utilizado en las ilustraciones (no suministrado)

Equipamento utilizado nas ilustrações (não fornecido)

Utrustning som visas i illustrationer (medföljer inte)

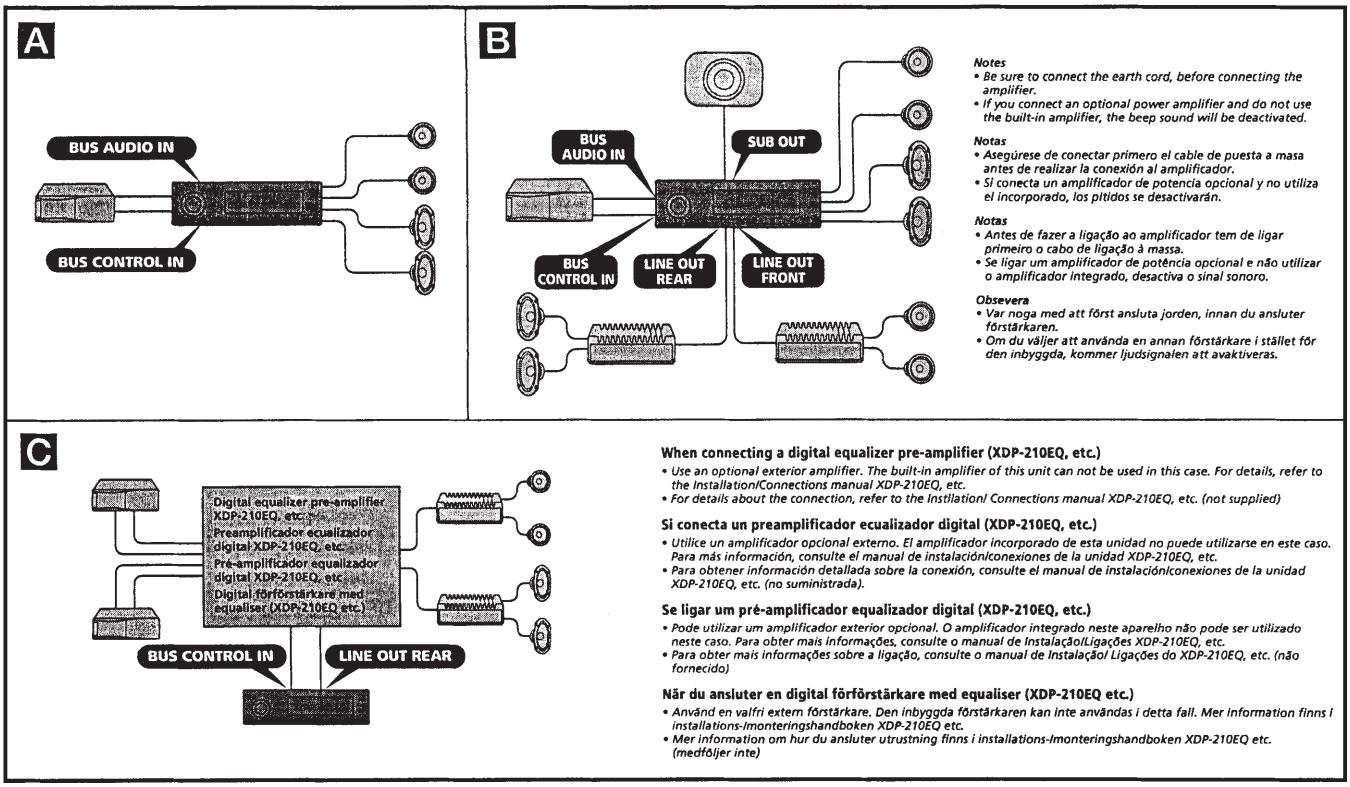


For connecting two or more changers, the source selector XA-C30 (optional) is necessary.

Si desea conectar dos o más cambiadores, necesitará el selector de fuente XA-C30 (opcional).

Para ligar um ou mais permutadores, é necessário o selector de fonte XA-C30 (opcional).

För anslutning av två eller flera växlare krävs väljaren XA-C30 (tillval).



Notes
- *Be sure to connect the earth cord, before connecting the amplifier.*
- *If you connect an optional power amplifier and do not use the built-in amplifier, the beep sound will be deactivated.*

Notas
- *Asegúrese de conectar primero el cable de puesta a masa antes de realizar la conexión al amplificador.*
- *Si conecta un amplificador de potencia opcional y no utiliza el incorporado, los pitidos se desactivarán.*

Notas
- *Antes de fazer a ligação ao amplificador tem de ligar primeiro o cabo de ligação à massa.*
- *Se ligar um amplificador de potência opcional e não utilizar o amplificador integrado, desactiva o sinal sonoro.*

Obsevera
- *Var noga med att först ansluta jorden, innan du ansluter förstärkaren.*
- *Om du väljer att använda en annan förstärkare i stället för den inbyggda, kommer ljudsignalen att avaktiveras.*

When connecting a digital equalizer pre-amplifier (XDP-210EQ, etc.)
- *Use an optional exterior amplifier. The built-in amplifier of this unit can not be used in this case. For details, refer to the Installation/Connections manual XDP-210EQ, etc.*
- *For details about the connection, refer to the Instliation/ Connections manual XDP-210EQ, etc. (not supplied)*

Si conecta un preamplificador ecualizador digital (XDP-210EQ, etc.)
- *Utilice un amplificador opcional externo. El amplificador incorporado de esta unidad no puede utilizarse en este caso. Para más información, consulte el manual de instalación/conexiones de la unidad XDP-210EQ, etc.*
- *Para obtener información detallada sobre la conexión, consulte el manual de instalación/conexiones de la unidad XDP-210EQ, etc. (no suministrada).*

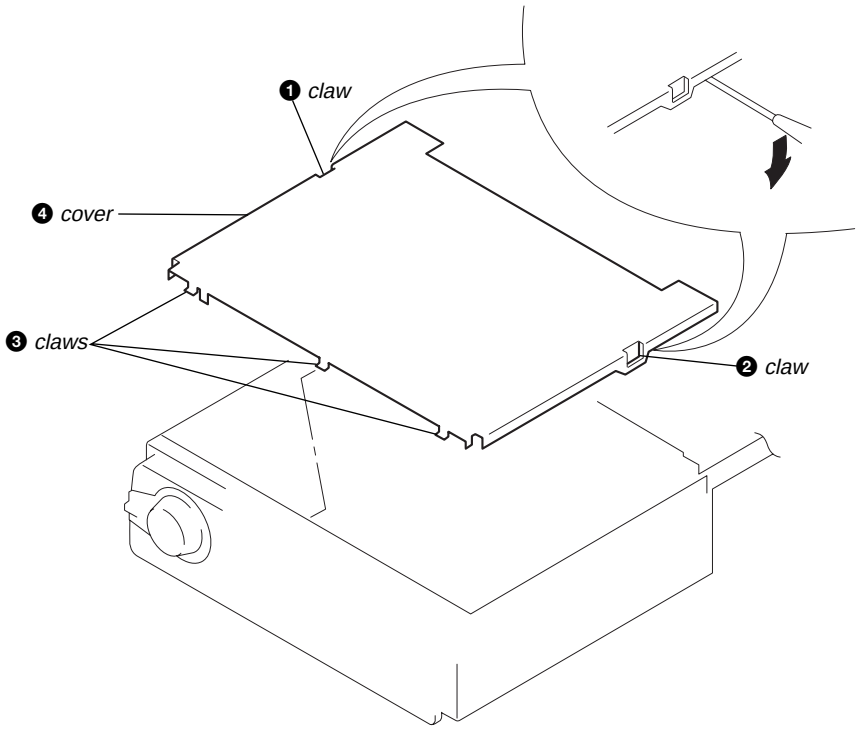
Se ligar um pré-amplificador equalizador digital (XDP-210EQ, etc.)
- *Pode utilizar um amplificador exterior opcional. O amplificador integrado neste aparelho não pode ser utilizado neste caso. Para obter mais informações, consulte o manual de Instalação/Ligações XDP-210EQ, etc.*
- *Para obter mais informações sobre a ligação, consulte o manual de Instalação/ Ligações do XDP-210EQ, etc. (não fornecido)*

När du ansluter en digital förförstärkare med equaliser (XDP-210EQ etc.)
- *Använd en valfri extern förstärkare. Den inbyggda förstärkaren kan inte användas i detta fall. Mer information finns i installations-/monteringshandboken XDP-210EQ etc.*
- *Mer information om hur du ansluter utrustning finns i installations-/monteringshandboken XDP-210EQ etc. (medföljer inte)*

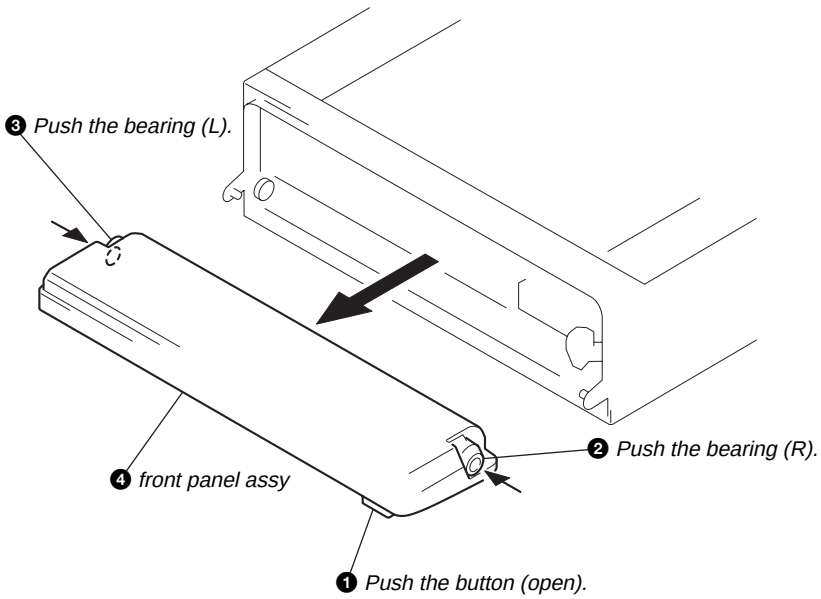
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

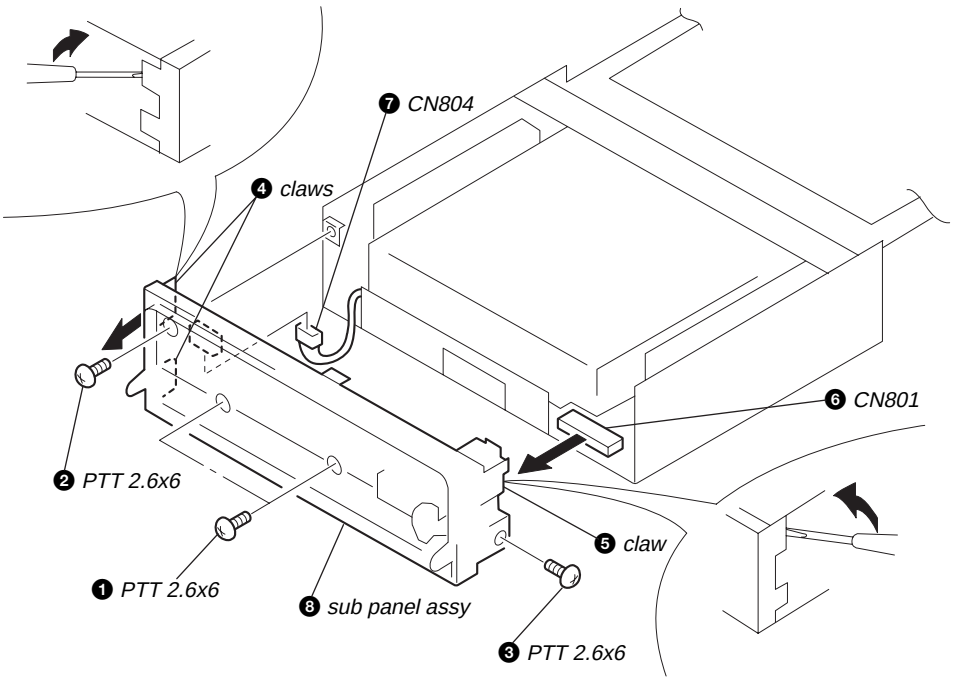
2-1. COVER



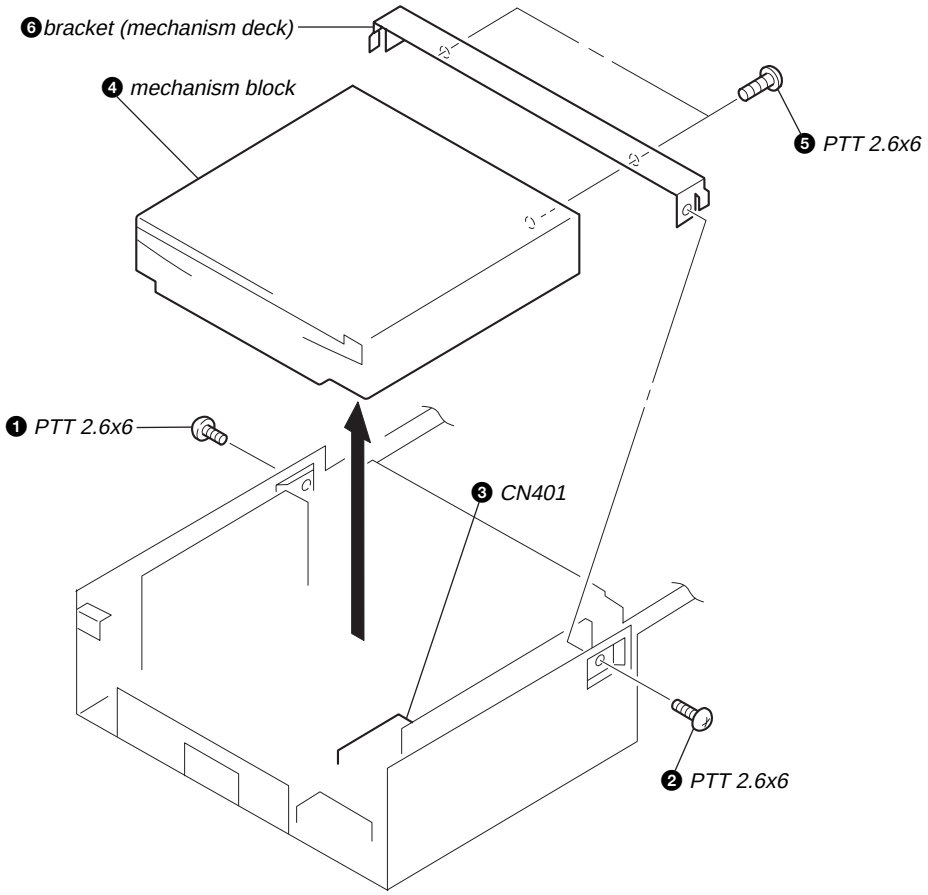
2-2. FRONT PANEL ASSY



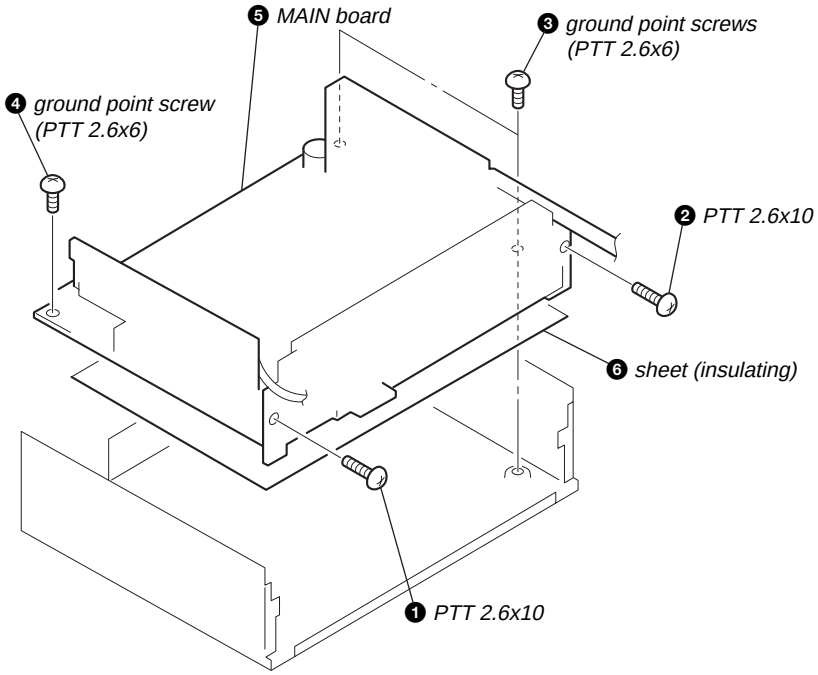
2-3. SUB PANEL ASSY



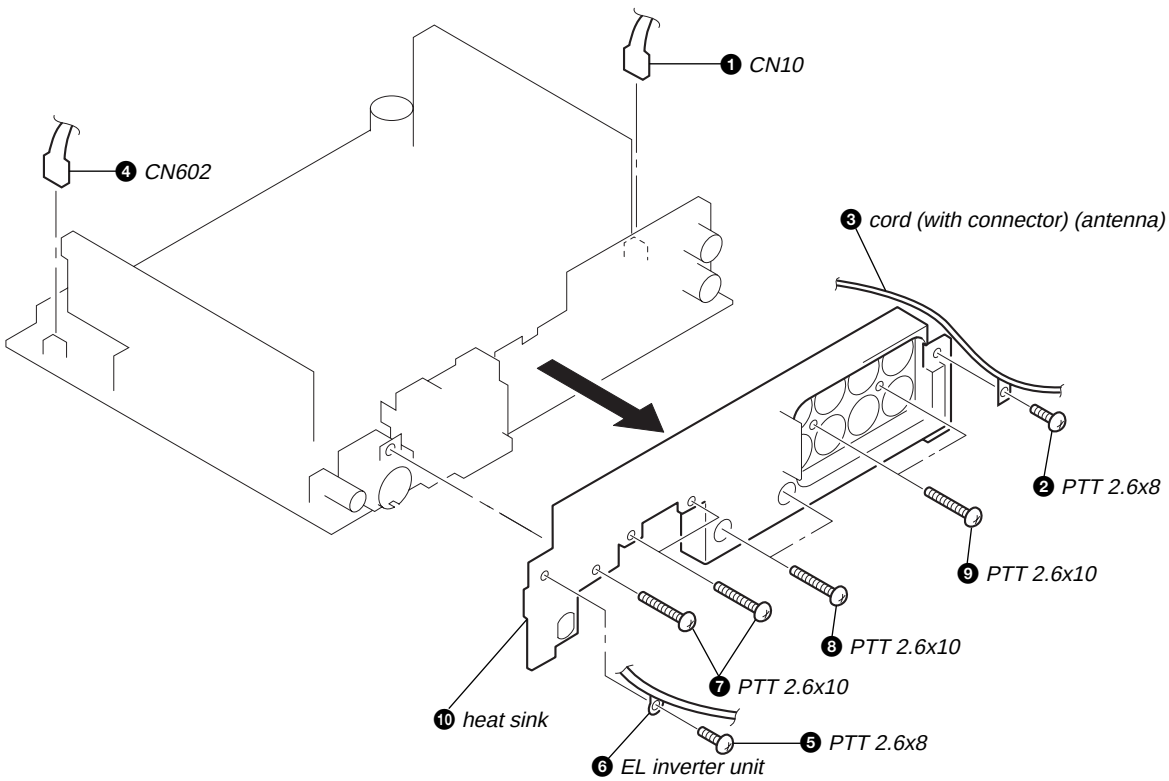
2-4. MECHANISM BLOCK



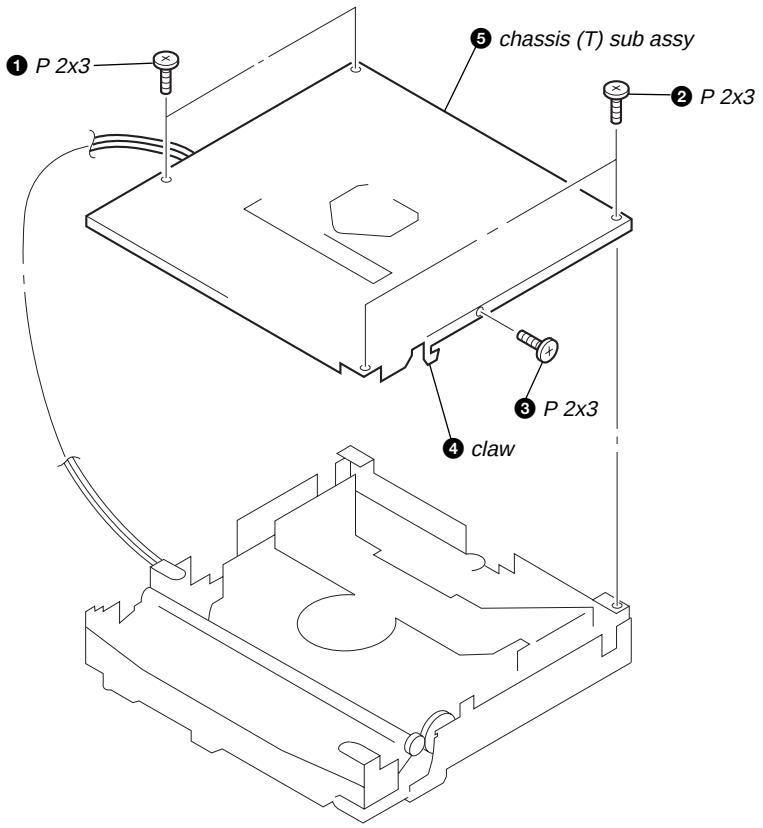
2-5. MAIN BOARD



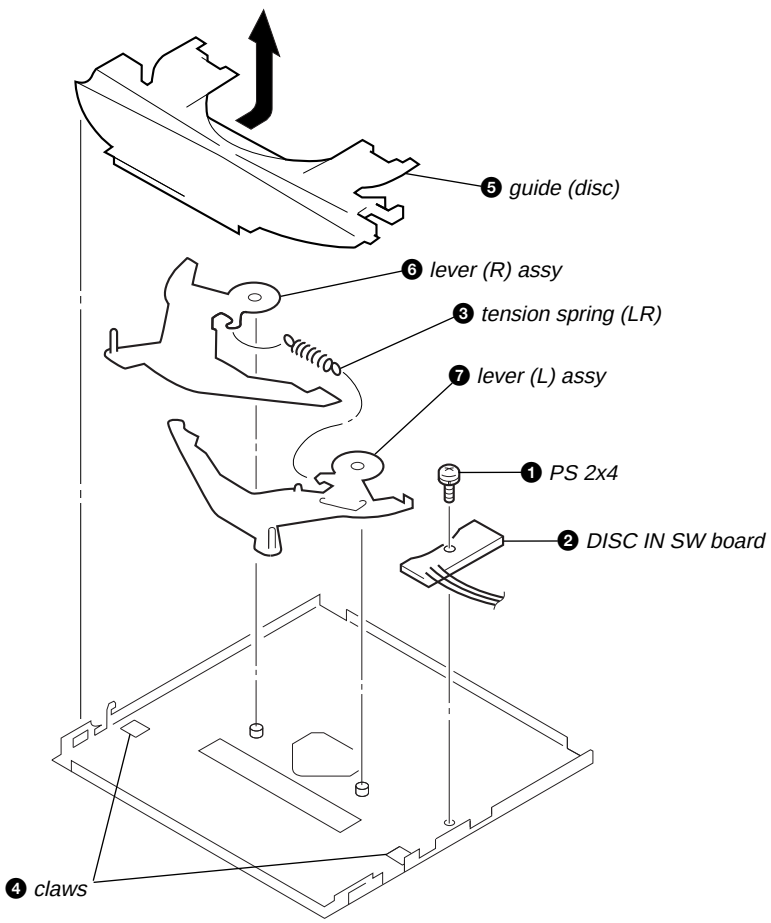
2-6. HEAT SINK



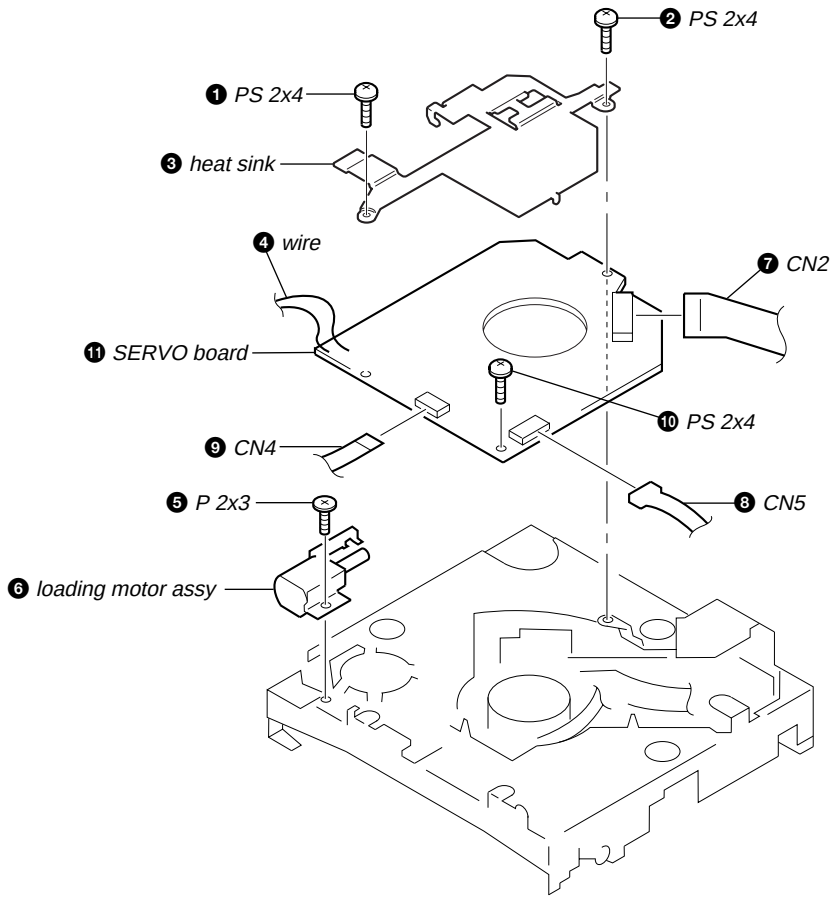
2-7. CHASSIS (T) SUB ASSY



2-8. LEVER ASSY



2-9. SERVO BOARD



2-10. ROLLER ASSY

• When installing, take note of the positions arm (roller) and washers. (Fig. 1)

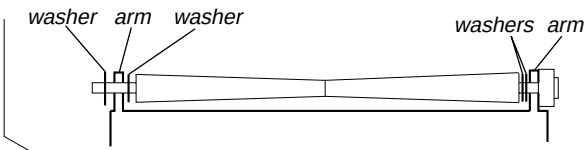
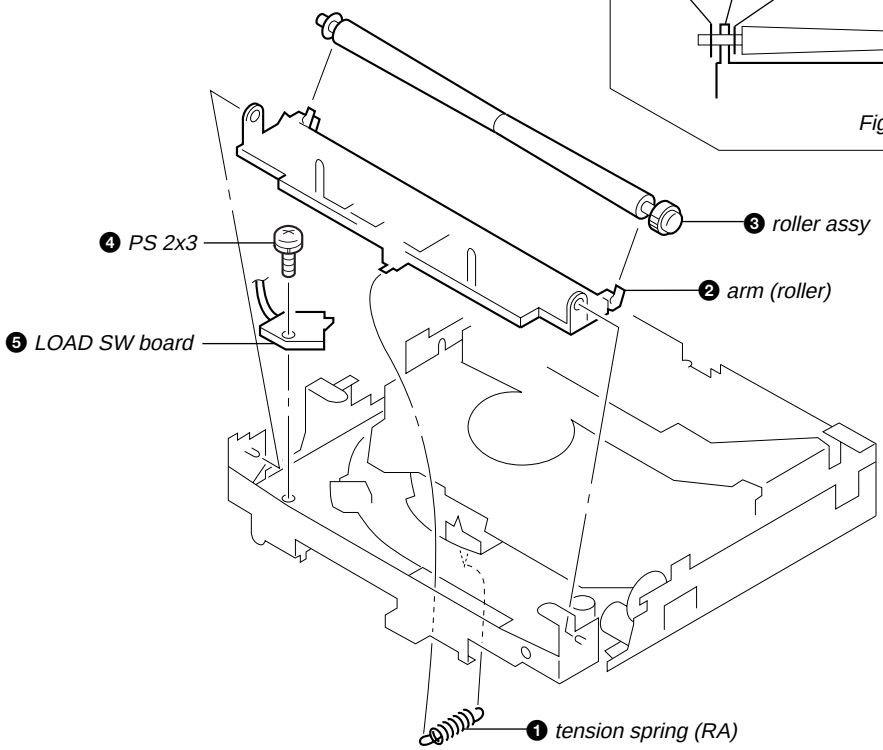
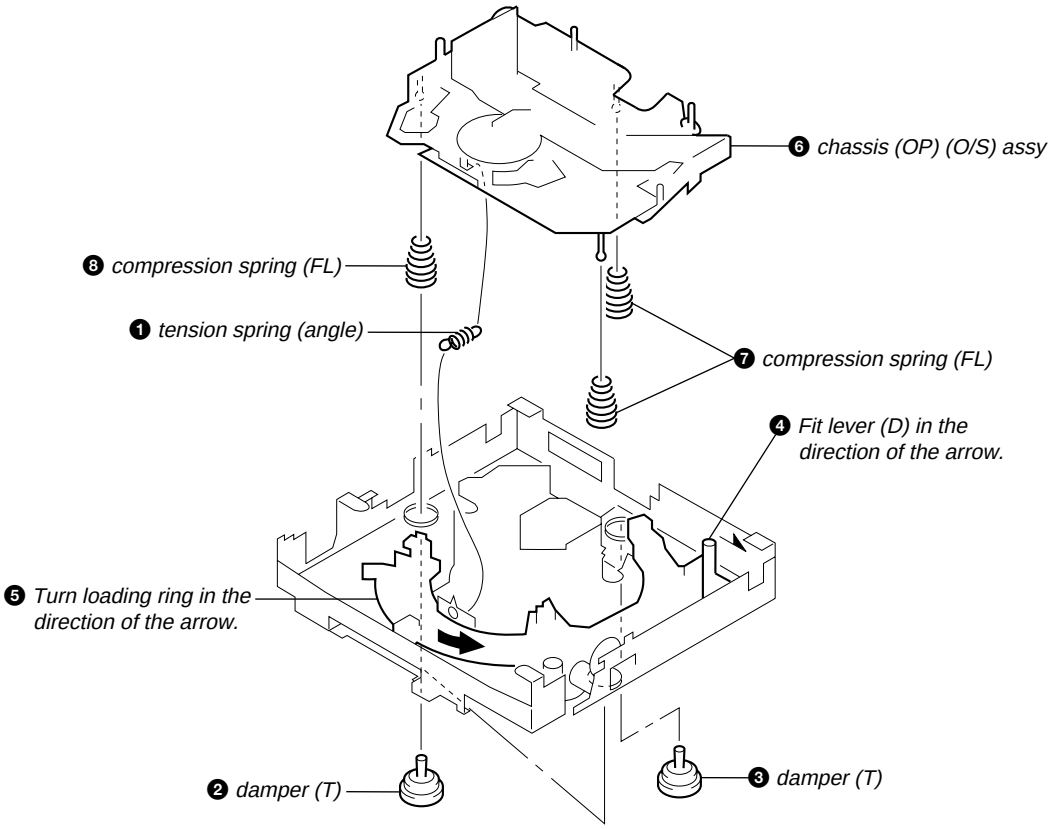


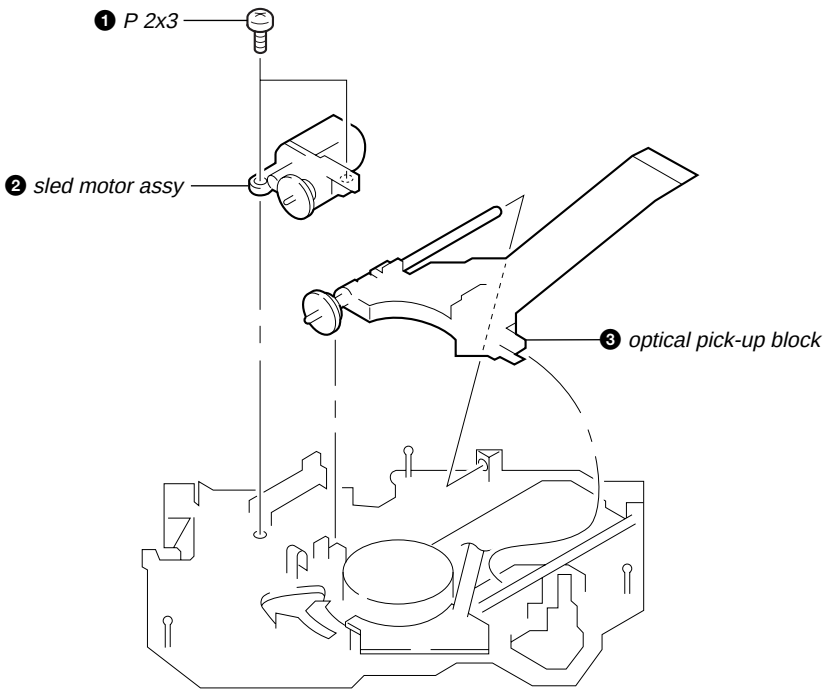
Fig. 1



2-11. CHASSIS (OP) (O/S) ASSY


❻ chassis (OP) (O/S) assy
❽ compression spring (FL)
❶ tension spring (angle)
❼ compression spring (FL)
❹ Fit lever (D) in the direction of the arrow.
❺ Turn loading ring in the direction of the arrow.
❷ damper (T)
❸ damper (T)

2-12. OPTICAL PICK-UP BLOCK



SECTION 3
ELECTRICAL ADJUSTMENTS

CD SECTION

CD section adjustments are done automatically in this set.

TUNER SECTION **0 dB = 1 μV**

Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and MW Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

<Set the Test Mode>

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for more than two seconds.
5. Then the display indicates all lights, the test mode is set.

<Release the Test Mode>

1. Push the [OFF] button.

Note on Adjustment

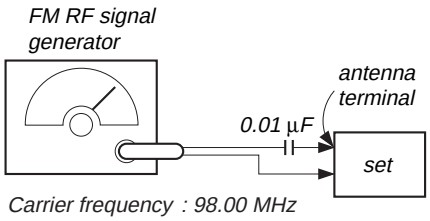
The adjustments of tuner section, should be performed according to the following sequence.

1. FM Auto Scan/Stop Level Adjustment
2. FM Stereo Separation Adjustment (WIDE)
3. FM Stereo Separation Adjustment (NARROW)
4. FM RDS S-Meter Adjustment
5. MW Auto Scan/Stop Level Adjustment

FM Auto Scan/Stop Level Adjustment

Setting :

SOURCE button : FM

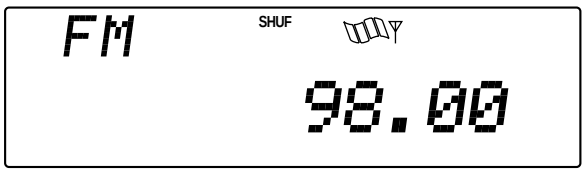


Carrier frequency : 98.00 MHz
Output level : 22 dB (12.6 μV)
Mode : mono
Modulation : 1 kHz, 22.5 kHz deviation (30%)

Procedure :

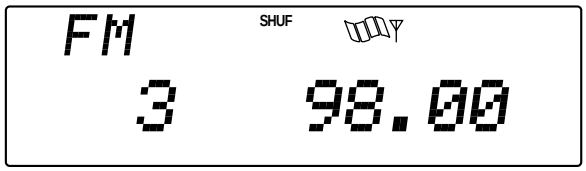
1. Set to the test mode.
2. Push the [SOURCE] button and set to FM.

Display



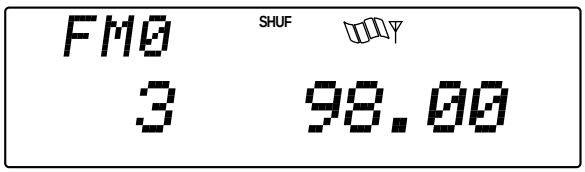
3. Push the preset [3] button.

Display



4. Adjust with the volume RV2 on TU10 so that the "FM" indication turns to "FM0" indication on the display window. But, in case of already indicated "FM0", turn the RV2 so that put out light "0" indication and adjustment.

Display

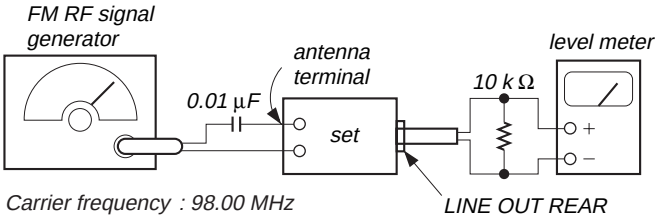


Adjustment Location : See page 22.

FM Stereo Separation Adjustment (WIDE)

Setting :

SOURCE button : FM1



Carrier frequency : 98.00 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main : 1 kHz, 20 kHz deviation (26.5%)
sub : 1 kHz, 20 kHz deviation (26.5%)
19 kHz pilot : 7.5 kHz deviation (10%)

Procedure :

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV3 on TU10 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV3 on TU10 for minimum reading.

L-CH stereo separation : Ⓐ – Ⓑ
R-CH stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

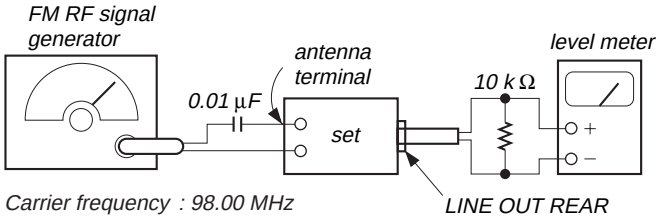
Specification : Separation more than 24 dB

Adjustment Location : See page 22.

FM Stereo Separation Adjustment (NARROW)

Setting :

SOURCE button : FM1



Carrier frequency : 98.00 MHz
Output level : 70 dB (3.2 mV)
Mode : stereo
Modulation : main : 1 kHz, 20 kHz deviation (26.5%)
sub : 1 kHz, 20 kHz deviation (26.5%)
19 kHz pilot : 7.5 kHz deviation (10%)

Procedure :

1. Push the [SHIFT] button.
2. Push the [4] button three times.
3. Push the [5] button twice and set to NARROW mode.

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU10 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU10 for minimum reading.

L-CH stereo separation : Ⓐ – Ⓑ
R-CH stereo separation : Ⓒ – Ⓓ
The separations of both channels should be equal.

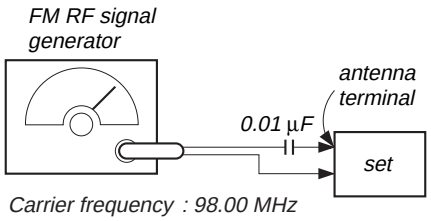
Specification : Separation more than 18 dB

Adjustment Location : See page 22.

FM RDS S-Meter Adjustment

Setting :

SOURCE button : FM

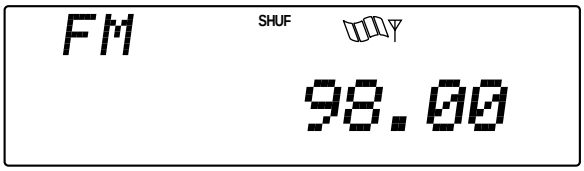


Carrier frequency : 98.00 MHz
Output level : 35 dB (56.2 µV)
Mode : mono
Modulation : no modulation

Procedure :

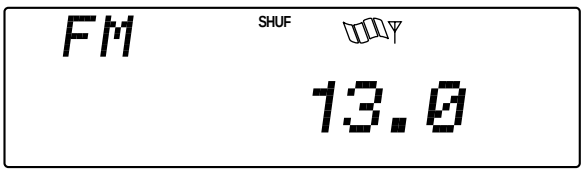
1. Set to the test mode. (See page 19.)
2. Push the SOURCE button and set to FM.

Display



3. Push the preset 10 button.
4. Adjust RV10 so that the display indication is “13.0”.

Display



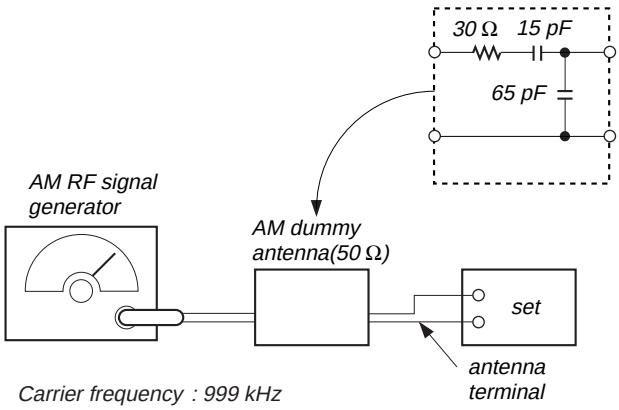
Specification : Display indication : 12.8 to 13.2.

Adjustment Location : See page 22.

MW Auto Scan/Stop Level Adjustment

Setting :

SOURCE → MODE button : MW

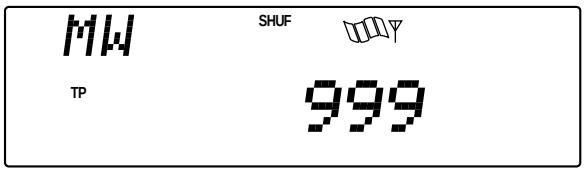


Carrier frequency : 999 kHz
30% amplitude modulation by 1 kHz signal
output level : 33 dB (44.7 µV)

Procedure :

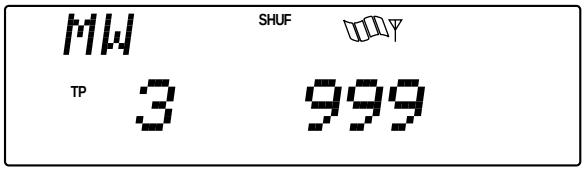
1. Set to the test mode. (See page 19.)
2. Push the SOURCE button.
3. Push the MODE button and set to MW.

Display



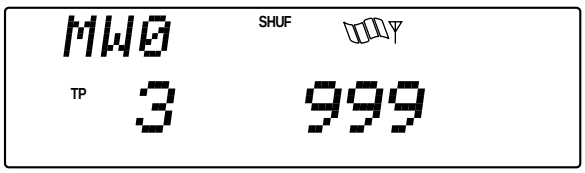
4. Push the preset 3 button.

Display



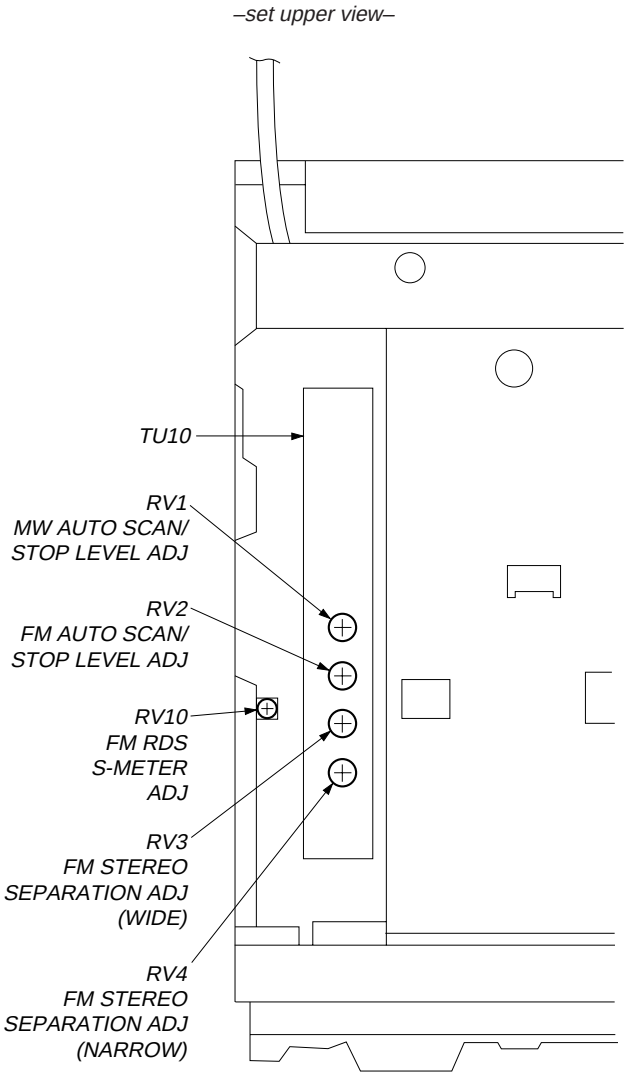
5. Adjust with the volume RV1 on TU10 so that the “MW” indication turns to “MW0” indication on the display window. But, in case of already indicated “MW0”, turn the RV1 so that put out light “0” indication and adjustment.

Display



Adjustment Location : See page 22.

Adjustment Location : tuner unit (TU10)



SECTION 4
DIAGRAMS

4-1. IC PIN DESCRIPTIONS

• IC5 CXP84640-050Q (CD SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Pin Description
1 – 5	NCO	—	Not used in this set.
6	FP OPEN	I	Front panel open detection input
7	FP CLOSE	O	Front panel close control output
8	LINKOFF	I	Bus interface link input (Not used in this set.)
9	DRV OE	O	Focus/tracking coil/sled motor control output
10	$\overline{\text{D SW}}$	I	Down switch input (SW4)
11 – 13	NCO	—	Not used in this set.
14	LM EJ	O	Loading motor control output
15	LM LOD	O	Loading motor control output
16	EMPH O	O	De-emphasis ON/OFF control output
17	$\overline{\text{CDMON}}$	O	CD mechanism deck power control output
18	$\overline{\text{CD ON}}$	O	CD power control output
19	A MUT	O	System attenuate control output
20	$\overline{\text{LD ON}}$	O	Laser power ON/OFF control output
21	$\overline{\text{CD RST}}$	O	CD system reset output
22 – 24	—	—	Not used in this set.
25	PH3	I	Not used in this set.
26	TSTIN0	I	Not used in this set.
27	TSTIN1	I	Not used in this set.
28	$\overline{\text{TST CLV}}$	I	Not used in this set.
29	NCO	—	Not used in this set.
30	$\overline{\text{RESET}}$	I	System reset input (“L” = Reset)
31	$\overline{\text{X IN}}$	I	X’tal oscillator input of system clock. (10 MHz)
32	$\overline{\text{X OUT}}$	O	X’tal oscillator output of system clock. (10 MHz)
33	GND	—	Analog GND
34	$\overline{\text{XT OUT}}$	O	Not used in this set.
35	$\overline{\text{XT IN}}$	I	Not used in this set.
36	AVSS	—	A/D converter GND
37	AVREF	I	A/D converter reference voltage input
38	TEP L	I	Not used in this set.
39	TEP H	I	Not used in this set.
40	NCO	—	Not used in this set.
41	PH2	I	Not used in this set.
42	SCLK	O	CD-TEXT data read clock output
43	$\overline{\text{ESPXQOK}}$	O	XQOK signal output to DRAM controller.
44	ESPSDT	I	Serial data input from DRAM controller.
45	$\overline{\text{GRSRST}}$	O	Reset signal output to DRAM controller.
46	GRSCOR	I	Sub-cord sync input from DRAM controller.
47	CD XLAT	O	CD signal process serial latch output
48	TX CLK	O	EEPROM serial clock output
49	TX DATA	O	EEPROM serial data output
50	UNISO	O	Not used in this set.
51	BUS CLK	I/O	Bus system serial clock input/output
52	BUS SI	I	Bus system serial interface input
53	BUS SO	O	Bus system serial interface output
54	F OK	I	Focus OK signal input
55	GFS	I	GFS signal detection input
56	SCOR	O	Sub-cord sync output
57	SENS	I	SENS signal input
58	—	I	Fixed at “H” in this set.
59	CD CKO	O	CD signal process serial clock output

Pin No.	Pin Name	I/O	Pin Description
60	BU.IN	I	Back-up power detection input
61	$\overline{\text{BUSON}}$	I	Bus on control input
62	$\overline{\text{IN SW}}$	I	Disc in switch input (SW1)
63	$\overline{\text{SELF SW}}$	I	Self switch input (SW2)
64	$\overline{\text{TX CE}}$	O	EEPROM chip enable output
65	SCK2	O	Sub Q read clock output
66	SI2	I	Sub Q 80 bit, PCM peak and level data 16 bit input
67	CD DATA	O	CD signal process serial data output
68	$\overline{\text{ESPXWRE}}$	O	Write signal output to DRAM controller.
69	$\overline{\text{ESPXRDE}}$	O	Read signal output to DRAM controller.
70	$\overline{\text{ESPXLT}}$	O	Serial data latch output to DRAM controller.
71	$\overline{\text{ESPXSOE}}$	O	XSOE signal output to DRAM controller.
72	VDD	—	Power supply
73	HIN	I	Fixed at “H” in this set.
74	TEXT.ON/OFF	I	Fixed at “H” in this set.
75	PH1	I	Not used in this set.
76	FBTBSEL	I	Not used in this set.
77	$\overline{\text{CDOSEL}}$	I	Not used in this set.
78 – 80	—	—	Not used in this set.

• IC501 CXD2548R (DIGITAL SERVO, DIGITAL SIGNAL PROCESSOR) (SERVO BOARD)

Pin No.	Pin Name	I/O	Pin Description
1	SYSM	I	System mute input (Not used.)
2	RMUT1	O	R-ch, “0” detection output. (“H” : ON, “L” : OFF) (Not used.)
3	LMUT2	O	L-ch, “0” detection output. (“H” : ON, “L” : OFF) (Not used.)
4	CKOUT	O	Master clock frequency division output (Not used.)
5	VDD0	—	Digital power supply
6	SBSO	O	Serial output of sub-P to W.
7	EXCK	I	Clock input for SBSO read output.
8	SQCK	I	Clock input for SQSO read output.
9	SQSO	O	SubQ 80 bit, PCM peak and level data 16 bit output.
10	SENS	O	SENS output. Output to CPU.
11	SCLK	I	Clock input for SENS real data read.
12	DATA	I	Serial data input from CPU.
13	XLAT	I	Latch input from CPU. Latch serial data at the falling edge.
14	CLOK	I	Serial data transfer clock input from CPU.
15	XRST	I	System reset (“L” : Reset)
16	ACDT	O	Not used.
17	PWM1	I	External control input of spindle motor.
18	XLON	O	Microcomputer extension interface (Output) (Not used.)
19	SPOA	I	Microcomputer extension interface (Input A) (Not used.)
20	WFCK	O	WFCK (Write Flame Clock) output
21	GTOP	O	GTOP output
22	XUGF	O	XUGF output (Not used.)
23	XPCK	O	XPLCK output (Not used.)
24	GFS	O	GFS output
25	RFCK	O	RFCK output
26	C2PO	O	C2PO output (Not used.)
27	XROF	O	XROF output
28	SCOR	O	“H” output at either detection, sub code sync S0 or S1.
29	MNT0	O	MNT0 output (Not used.)
30	MNT1	O	MNT1 output (Not used.)
31	MNT3	O	MNT3 output (Not used.)
32	VSS1	—	Digital GND
33	DOUT	O	Digital-Out output
34	ATSK	I	For anti-shock.
35	MIRR	O	Mirror signal output (Not used.)
36	DFCT	O	Diffect signal output (Not used.)
37	FOK	O	Focus OK signal output
38	VDD1	—	Digital power supply
39	VPCO1	O	Charge pump output for wideband EFM PLL.
40	VPCO2	O	VCO2 charge pump output for wideband EFM PLL.
41	VCK.I	I	VCO2 oscillator input for wideband EFM PLL.
42	V16M	O	VCO2 oscillator output for wideband EFM PLL.
43	VCTL	I	VCO2 control input for wideband EFM PLL.
44	PCO	O	Charge pump output for master PLL.
45	FILO	O	Filter output for master PLL (slave = digital PLL).
46	FILI	I	Filter input for master PLL.
47	AVSS4	—	Analog GND
48	CLTV	I	VCO control voltage input for master.
49	AVDD4	—	Analog power supply
50	RFAC	I	EFM signal input
51	BIAS	I	Asymmetry circuit constant current input

Pin No.	Pin Name	I/O	Pin Description
52	ASY.I	I	Asymmetry comparate voltage input
53	ASY.O	O	EFM full-swing output (“L” : VSS, “H” : VDD)
54	VC	I	Center voltage input
55	FE	I	Focus error signal input
56	SE	I	Sled error signal input
57	TE	I	Tracking error signal input
58	CE	I	Center error signal input
59	RFDC	I	RF signal input
60	RFC	I	Condenser connection pin for LPF time constant of RF signal.
61	ADIO	O	OP amplifier output (Not used.)
62	AVSS3	—	Analog GND
63	IGEN	I	Current source reference resistor connection for OP amplifier.
64	AVDD3	—	Analog power supply
65, 66	TES2, 3	I	TEST pin (Fixed at “L”.)
67	VSS2	—	Digital GND
68	TEST	I	TEST pin (Fixed at “L”.)
69	SFDR	O	Sled drive output
70	SRDR	O	Sled drive output
71	TFDR	O	Tracking drive output
72	TRDR	O	Tracking drive output
73	FFDR	O	Focus drive output
74	FRDR	O	Focus drive output
75	VDD2	—	Digital power supply
76	COUT	O	Track number count signal output (Not used.)
77	LOCK	O	Not used.
78	MDS	O	Servo control output of spindle motor. (Not used.)
79	MDP	O	Servo control output of spindle motor.
80	SSTP	I	Disc most inner track detection signal input
81	FSTO	O	2/3 frequency division output of pins 103 and 104.
82	FSTI	I	Reference clock input for digital servo.
83	XTSL	I	X’tal select input (“L” : 16.9344 MHz)
84	C4M	O	4.2336 MHz output
85	WDCK	O	D/A interface. Word clock f = 2Fs
86	VDD3	—	Digital power supply
87	LRCK	O	D/A interface. LR clock f = Fs
88	LRCKI	I	LR clock input to DAC. (48 bit slot) (Connect to GND.)
89	PCMD	O	D/A interface. Serial data (2’s COMP, MSB first)
90	PCMDI	I	Audio data input to DAC. (48 bit slot) (Connect to GND.)
91	BCK	O	D/A interface. Bit clock
92	BCKI	I	Bit clock input to DAC. (48 bit slot) (Connect to GND.)
93	EMPH	O	Not used.
94	EMPHI	I	De-emphasis ON/OFF of DAC. (“H” : ON, “L” : OFF) (Connect to GND.)
95	VSS3	—	Digital GND
96	AVSS1	—	L-ch, Analog GND.
97	AVDD1	—	L-ch, Analog power supply.
98	AOUT1	O	L-ch, Analog output. (Not used.)
99	AIN1	I	L-ch, OP amplifier input. (Connect to GND.)
100	LOUT1	O	L-ch, LINE output. (Not used.)
101	AVSS1	—	L-ch, Analog GND.
102	XVDD	—	Analog power supply for master clock.
103	XTAI	I	X’tal oscillator input of master clock (16.9344 MHz).
104	XTAO	O	X’tal oscillator output of master clock. (Not used.)
105	XVSS	—	Analog GND for master clock. (Connect to GND.)

Pin No.	Pin Name	I/O	Pin Description
106	AVSS2	—	R-ch, Analog GND.
107	ROUT2	O	R-ch, LINE output. (Not used.)
108	AIN2	I	R-ch, OP amplifier input. (Connect to GND.)
109	AOUT2	O	R-ch, Analog output. (Not used.)
110	AVDD2	—	R-ch, Analog power supply.
111	AVSS2	—	R-ch, Analog GND.
112	VSS0	—	Digital GND

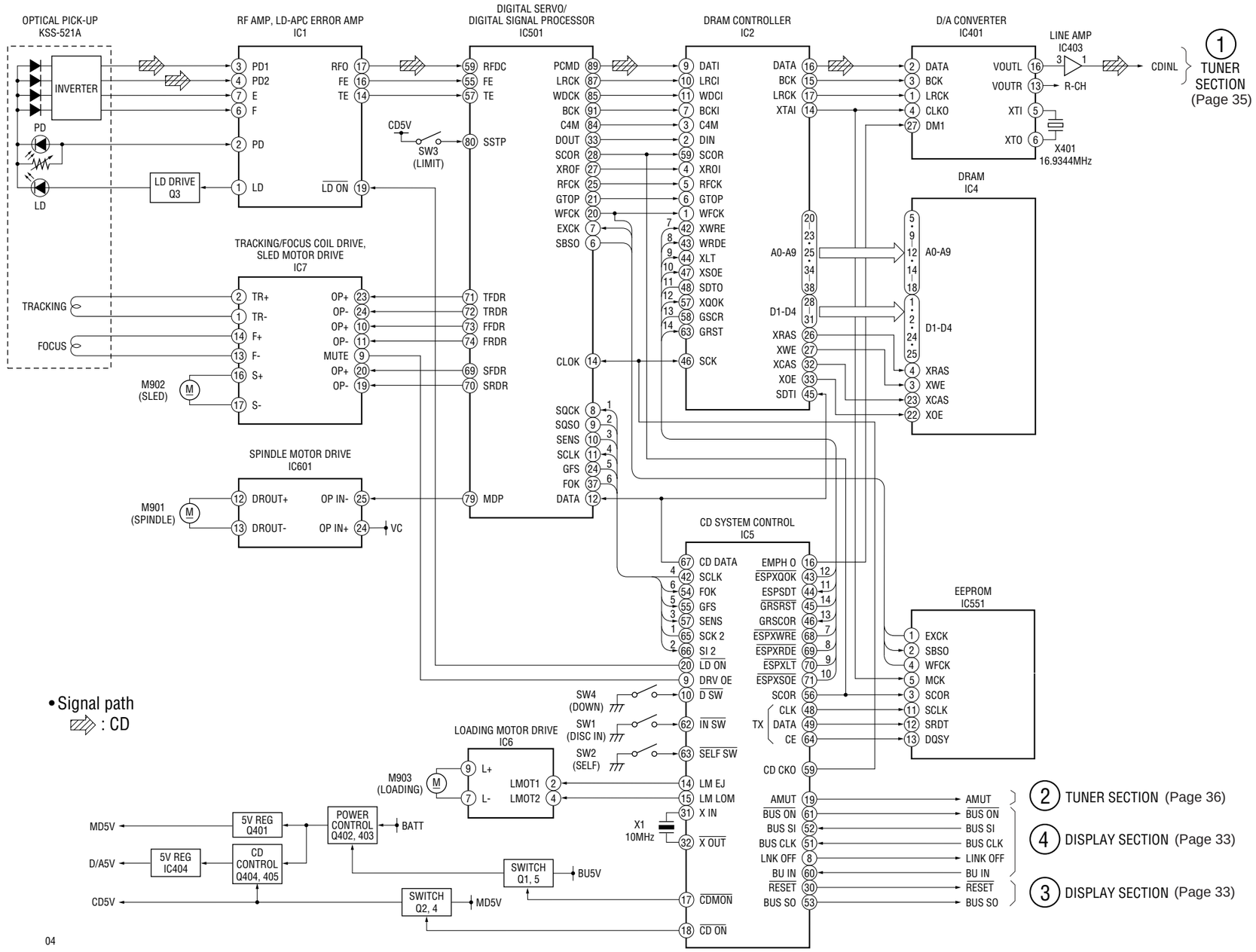
• IC501 MB90574PFV-G-183-BND (SYSTEM CONTROL) (MAIN BOARD)

Pin No.	Pin Name	I/O	Pin Description
1	$\overline{\text{SEKOUT}}$	O	SEEK OUT output
2	AF-SEEK	O	AF SEEK output
3	WIDE	O	WIDE/NARROW select output
4	ST-MONO	I/O	Use a thing both as ST-IND display input and force MONO output.
5	TUNMUTE	O	Tuner mute output
6	FM-ON	O	FM ON output
7	TU-ON	O	Tuner ON output
8	VCC	—	Power supply pin (+5 V)
9	$\overline{\text{CSV-RST}}$	O	Audio composition IC reset output (Not used in this set.)
10	BUSON	O	Bus ON control output
11	$\overline{\text{SYSRST}}$	O	System reset output
12	$\overline{\text{DOORSW}}$	I	Door OPEN/CLOSE detection input
13	LCDSO	O	LCD serial data output
14	LCDCKO	O	LCD serial clock output
15	BEEP	O	BEEP output
16	LCDCE	O	LCD chip enable output
17	UNISI	I	Serial data input
18	UNISO	O	Serial data output
19	UNICKIO	I/O	Serial clock input/output
20	SD-IN	I	Signal detector input
21	CSV-SO	O	Audio composition serial data output (Not used in this set.)
22	CSV-CKO	O	Audio composition serial clock output (Not used in this set.)
23	CSV-CE	O	Audio composition chip enable output (Not used in this set.)
24	SIRCS	I	Remote commander input
25	PLLSI	I	PLL data input
26	PLLSO	O	PLL data output
27	PLLCKO	O	PLL clock output
28	PLLCE	O	PLL chip enable output
29	ILL-ON	O	Illumination power control output
30	DIMMER	O	Dimmer control output
31	TIRIND	O	TIR indicator control output
32	$\overline{\text{LCDINH}}$	O	LCD blank display control output
33	VSS	—	GND
34	C	—	Power stabilization capacitor pin
35	$\overline{\text{AD-ON}}$	O	Power control output of A/D conversion.
36, 37	RE-IN0, 1	I	Rotary encoder input 0, 1
38	DVCC	—	D/A converter VREF input
39	DVSS	—	GND of D/A converter.
40	NCO	O	Not used.
41	LCDANG	O	LCD view angle alignment output
42	AVCC	—	Analog power supply pin (+5 V)
43	AVRH	—	A/D converter VREF+ input
44	AVRL	—	A/D converter VREF- input
45	AVSS	—	Analog GND
46, 47	KEYIN0, 1	I	Key input 0, 1
48	RC-IN0	I	Rotary commander input 0
49	DSTSEL0	I	Destination select input 0 (Fixed at “L” in this set.)
50	DSTSEL1	I	Destination select input 1 (Fixed at “L” in this set.)
51	DSTSEL2	I	Destination select input 2 (Fixed at “L” in this set.)
52	MTP	I	Tuner multi-pass input
53	VSM	I	S-Meter voltage detection input
54	VCC	—	Power supply pin (+5 V)

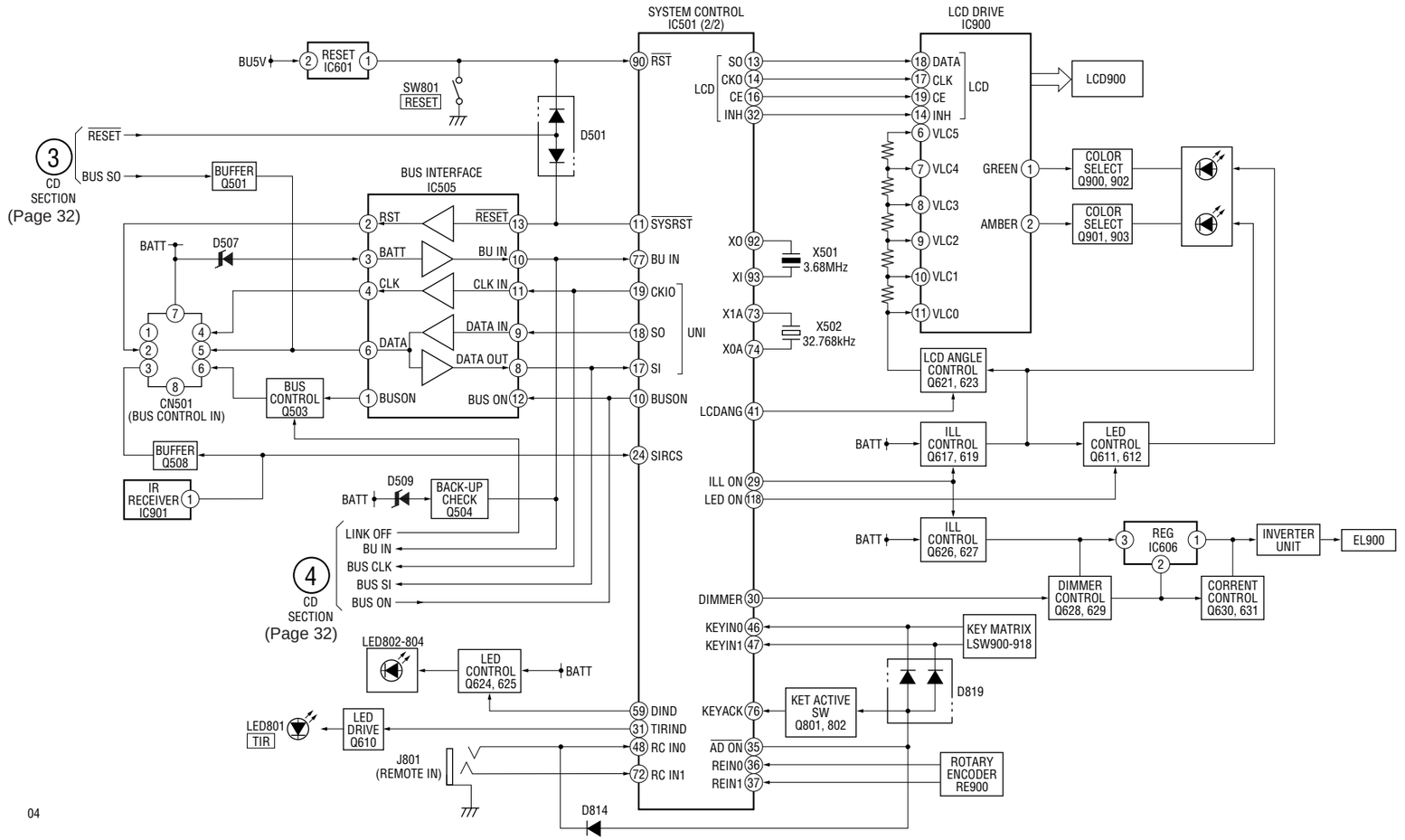
Pin No.	Pin Name	I/O	Pin Description
55	$\overline{\text{RAMBU}}$	I	RAM reset detection input
56	POWSEL	I	Power select initial setting input
57	$\overline{\text{EQ-SEL}}$	I	Equalizer connection with/without detection initial input
58	$\overline{\text{TESTIN}}$	I	Test mode setting detection input
59	DOORIND	O	Door indicator output
60	TIRPLAY	O	Audio line select control output at TIR playback.
61, 62	SUB-SW1, 0	O	Simple SUB WOOFER control output 1, 0
63	VSS	—	GND
64	VOLCE	O	Electric volume serial chip enable output
65	MUTE	O	System mute control output
66	VOLSO/SUBSO	O	Main/Sub volume serial data output
67	VOLCKO/SUBCKO	O	Main/Sub volume serial clock output
68	SUBCE	O	Sub volume serial chip enable output
69	$\overline{\text{FLASH-W}}$	I	Flash write in mode detection input
70	I2CSIO	I/O	RDS serial data input/output
71	I2CCKO	O	RDS serial clock output
72	RC-IN1	I	Rotary commander input
73	X1A	—	Low speed oscillation input (32.768 kHz)
74	X0A	—	Low speed oscillation input (32.768 kHz)
75	DAVN	I	RDS IC data taking in detection input
76	KEYACK	I	Key input acknowledge
77	BU-IN	I	Back-up power detection input
78	$\overline{\text{ILLIN}}$	I	Illumination line detection input
79	TELMUTE	I	Telephone mute detection input
80	$\overline{\text{NOSESW}}$	I	Front panel detachable detection input
81	$\overline{\text{ACCIN}}$	I	Accessory power detection input
82 – 85	TIR-D0 – D3	I/O	TIR IC command input/output 0 – 3
86	(VCC)	—	Connect to power supply pin.
87	(VSS)	—	Connect to GND.
88, 89	(VCC)	—	Connect to power supply pin.
90	$\overline{\text{RST}}$	—	Microcomputer reset input
91	VSS	—	GND
92	X0	—	High speed oscillation input (3.68 MHz)
93	X1	—	High speed oscillation input (3.68 MHz)
94	VCC	—	Power supply pin (+5 V)
95	TIR-BUSY	I	TIR IC BUSY output monitor pin
96	TIR-WR	O	TIR IC data write in pulse output
97, 98	TIR-CE	O	TIR IC chip enable output
99	TIR-RES	O	TIR IC reset/power down output
100	TIR-PDWN	O	TIR IC power down output
101	TIR-RD	O	TIR IC data read in pulse output
102	MTLIN	I	Auto METAL detection input (Not used in this set.)
103	AM STIN	I	AM stereo detection input (Not used in this set.)
104	REEL	I	Tape reel table rotation detection input (Not used in this set.)
105	POS0	I	Tape position detection input 0 (Fixed at “H” in this set.)
106	POS1	I	Tape position detection input 1 (Fixed at “H” in this set.)
107	POS2	I	Tape position detection input 2 (Fixed at “H” in this set.)
108	POS3	I	Tape position detection input 3 (Fixed at “H” in this set.)
109	LM-EJ	O	Tape loading motor control output (Eject direction) (Not used in this set.)
110	LM-LOD	O	Tape loading motor control output (Loading direction) (Not used in this set.)
111	CM-ON	O	Tape capstan motor control output (Not used in this set.)
112	TAPEON	O	Tape power control output (Not used in this set.)
113	N-ROUT	O	Tape forward/reverse detection output (Not used in this set.)

Pin No.	Pin Name	I/O	Pin Description
114	AMSON	O	Tape AMS control output (Not used in this set.)
115	DOLBC	I/O	Tape DOLBY B/C select control input/output (Not used in this set.)
116	DOLBY	I/O	Tape DOLBY control input/output (Not used in this set.)
117	CSV-NAR	I	Not used in this set.
118	LEDON	O	Front panel LED control output
119	VSS	—	GND
120	POWON	O	System power control output

4-2. BLOCK DIAGRAM — CD SECTION —

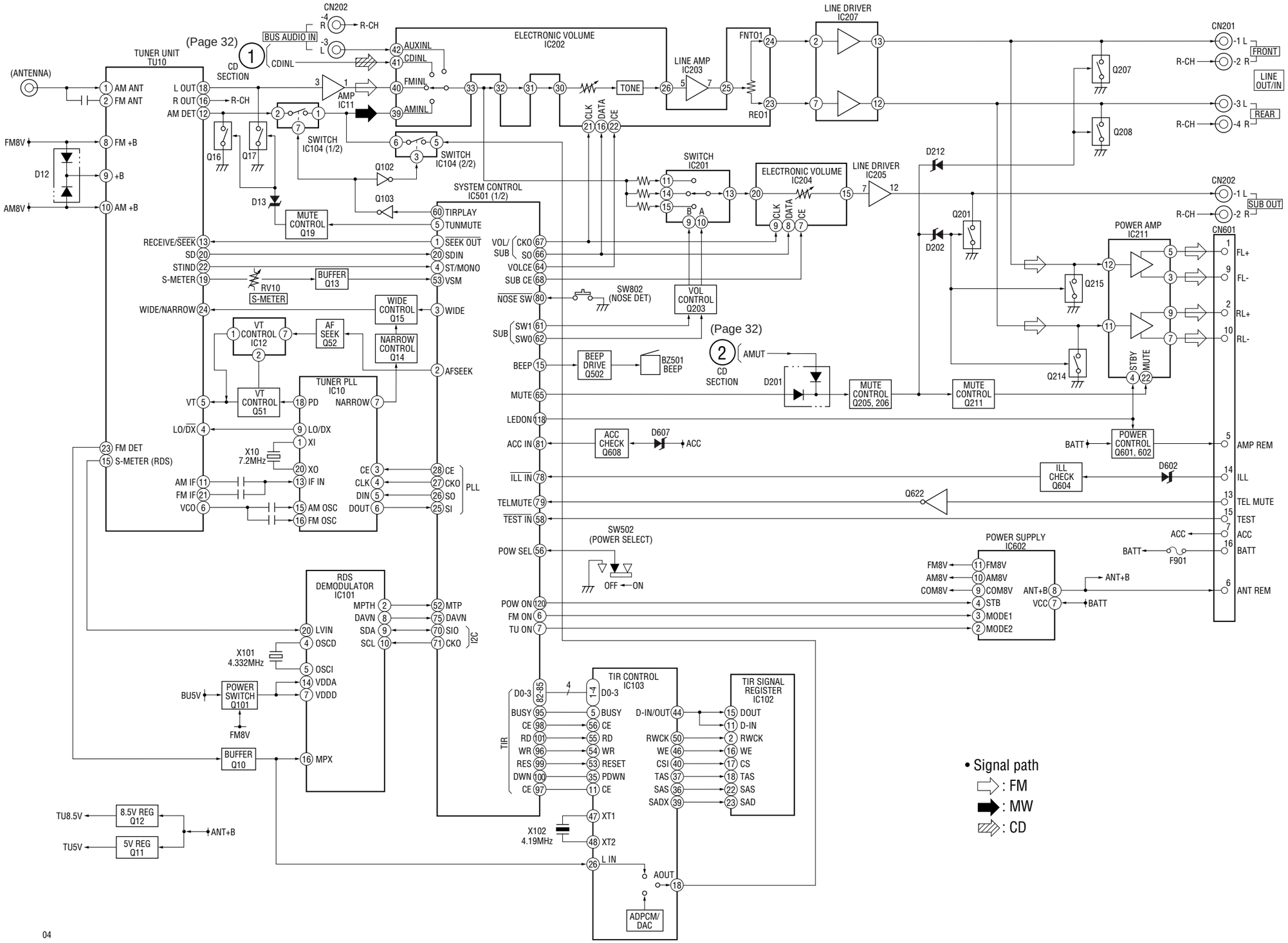


4-3. BLOCK DIAGRAM — DISPLAY SECTION —

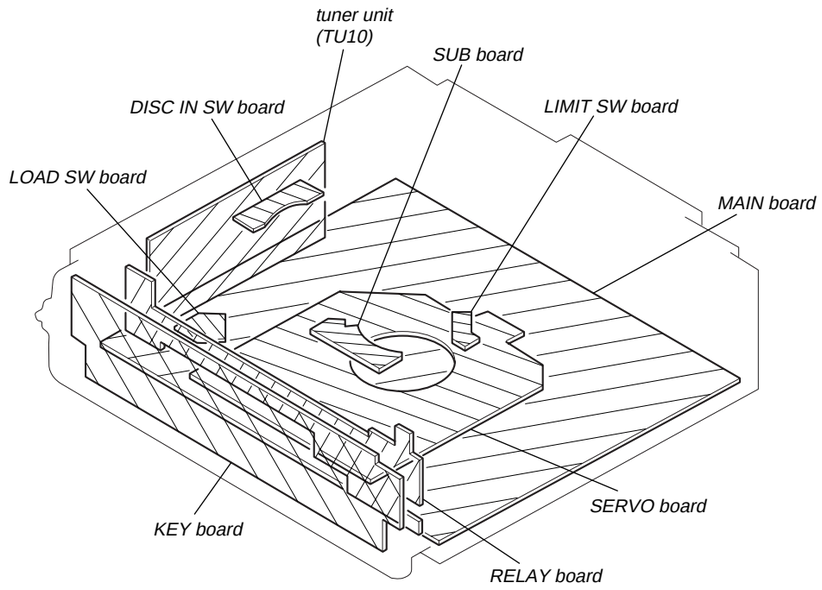


04

4-4. BLOCK DIAGRAM — TUNER SECTION —



4-5. CIRCUIT BOARDS LOCATION



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For schematic diagrams

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

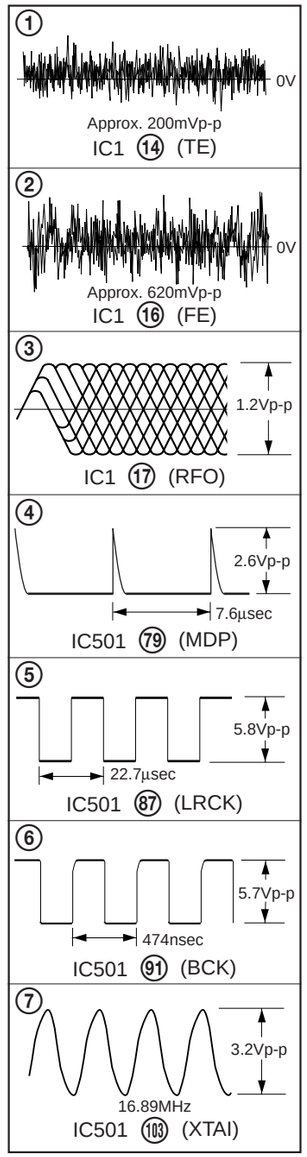
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ➡ : MW
  ⇨ : CD
- Abbreviation
  G : German model.

For printed wiring boards

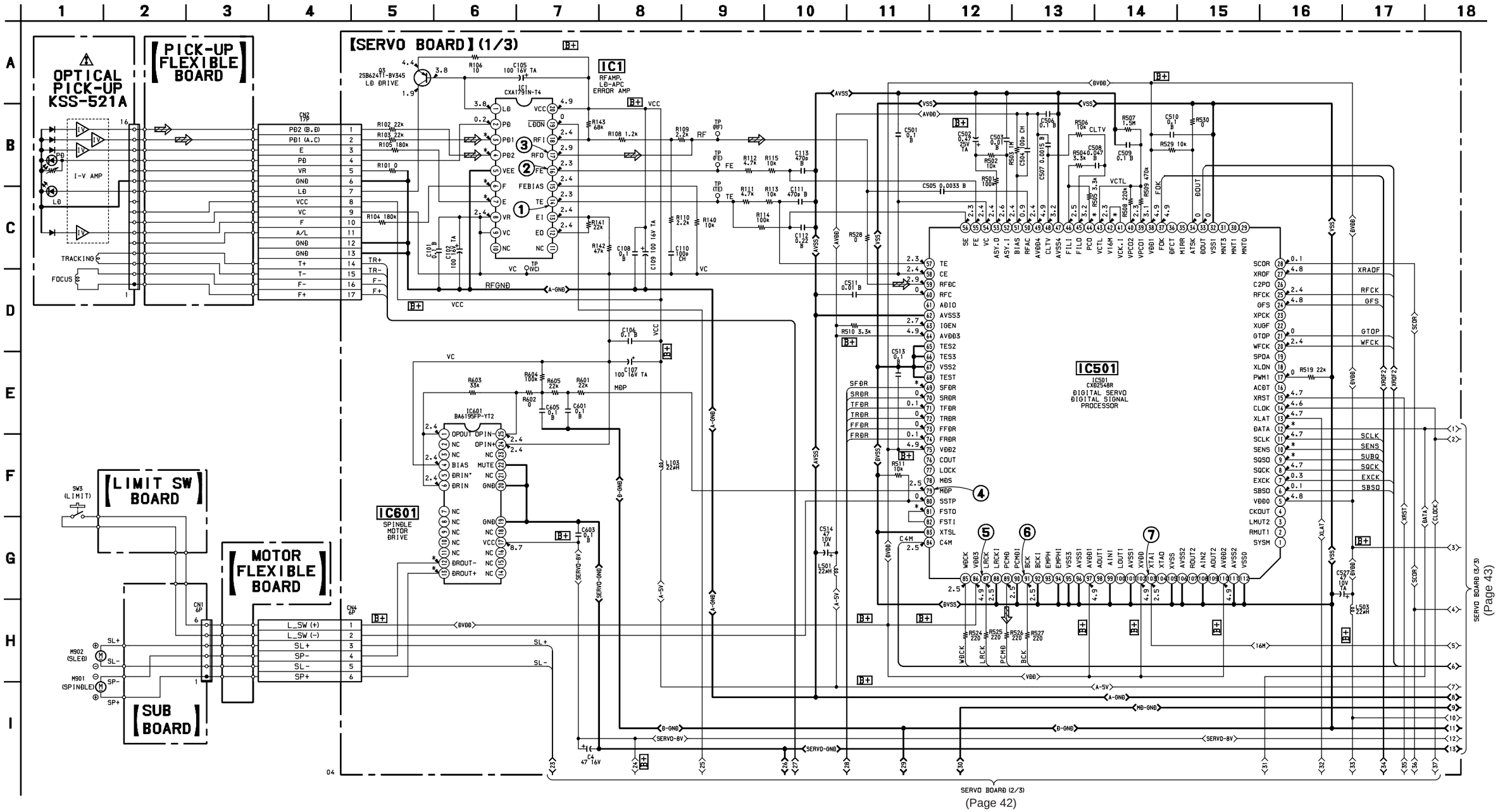
- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ○ : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

• Waveforms (MODE:PLAY)

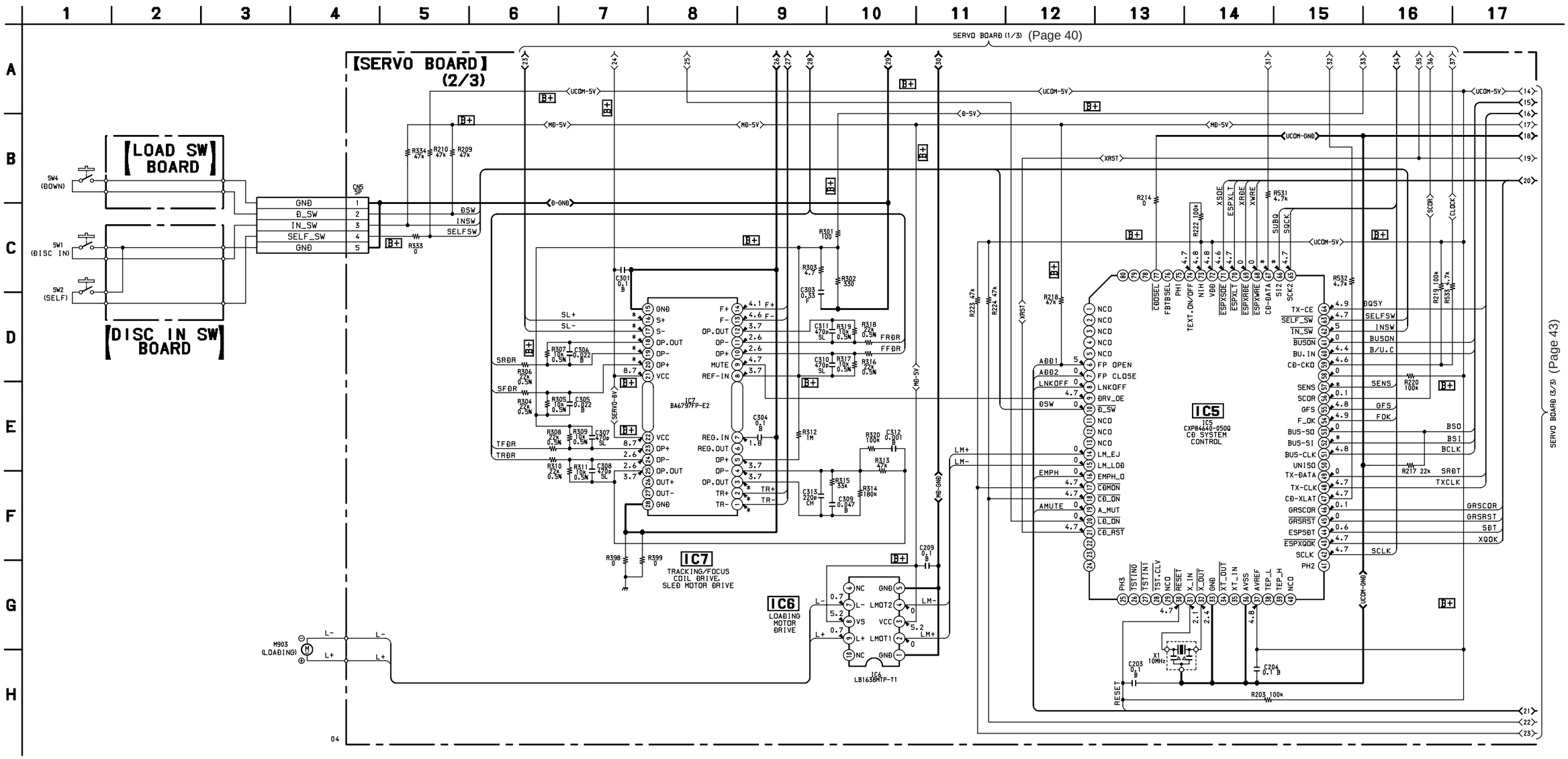


4-6. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (1/3) — • Refer to page 68 for IC Block Diagrams.



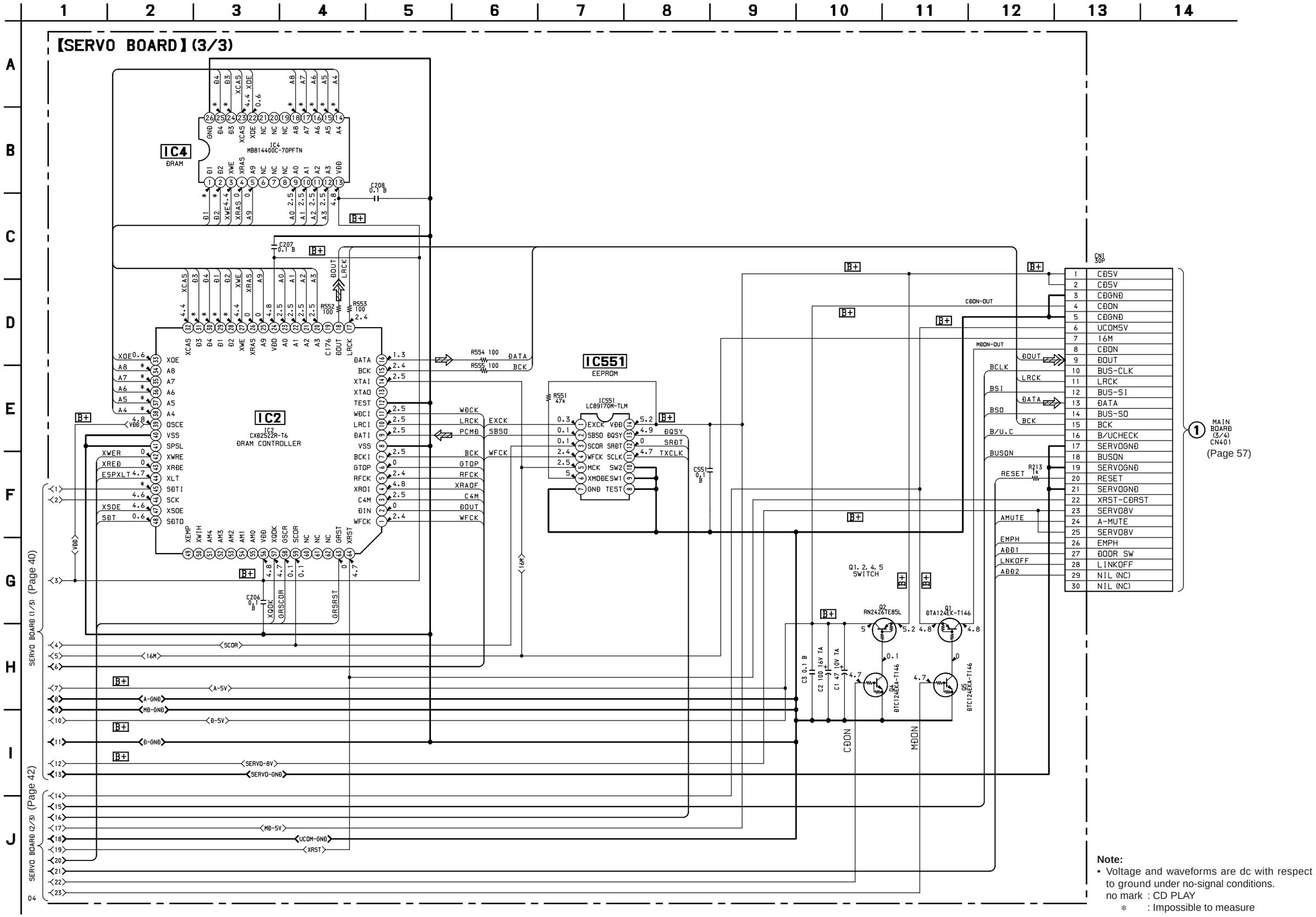
Note:
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
  ∗ : Impossible to measure

4-7. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (2/3) — • Refer to page 68 for IC Block Diagrams.



Note:
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
  * : Impossible to measure

4-8. SCHEMATIC DIAGRAM — CD MECHANISM SECTION (3/3) — • Refer to page 69 for IC Block Diagrams.



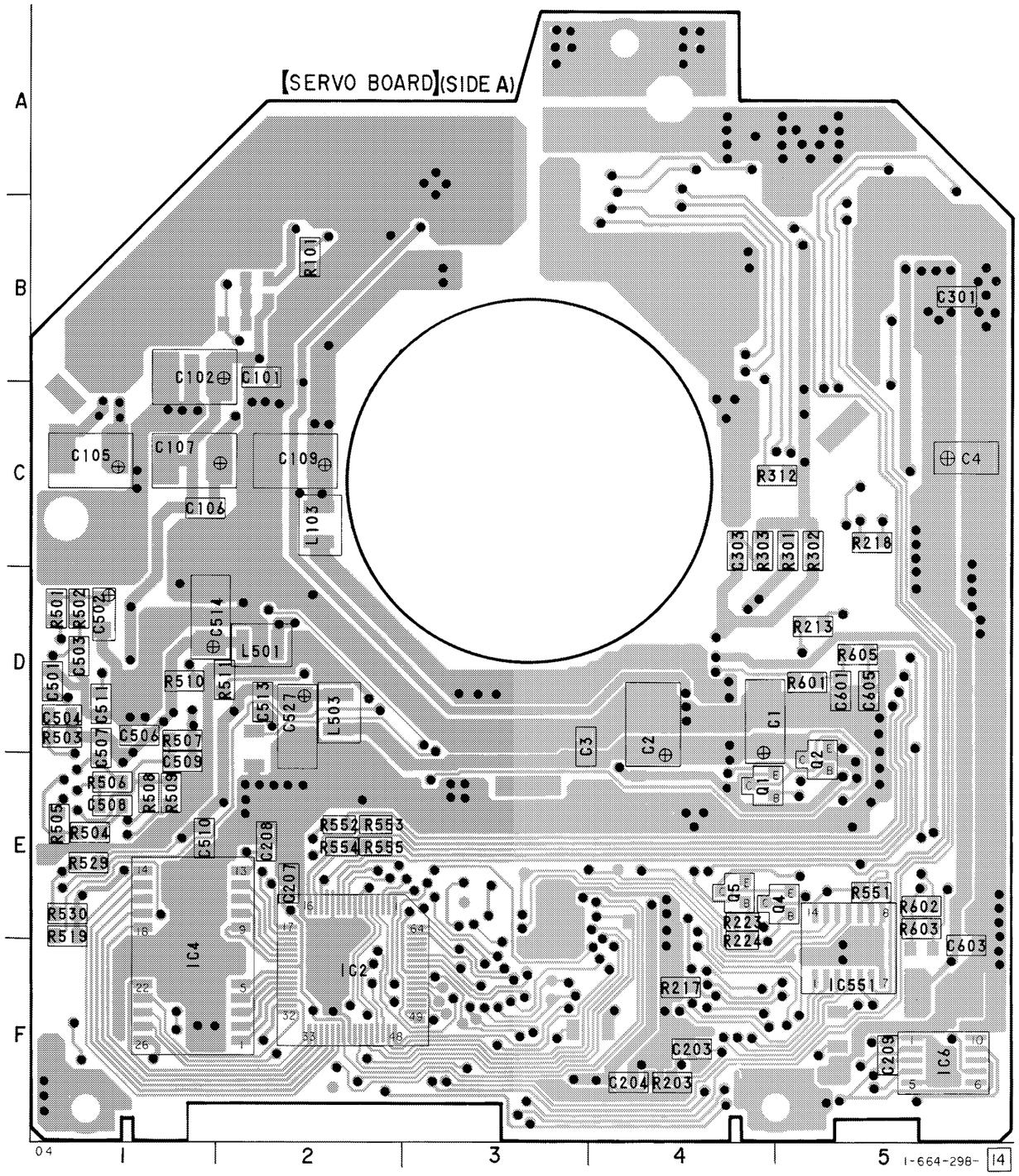
Note:
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
  ∗ : Impossible to measure

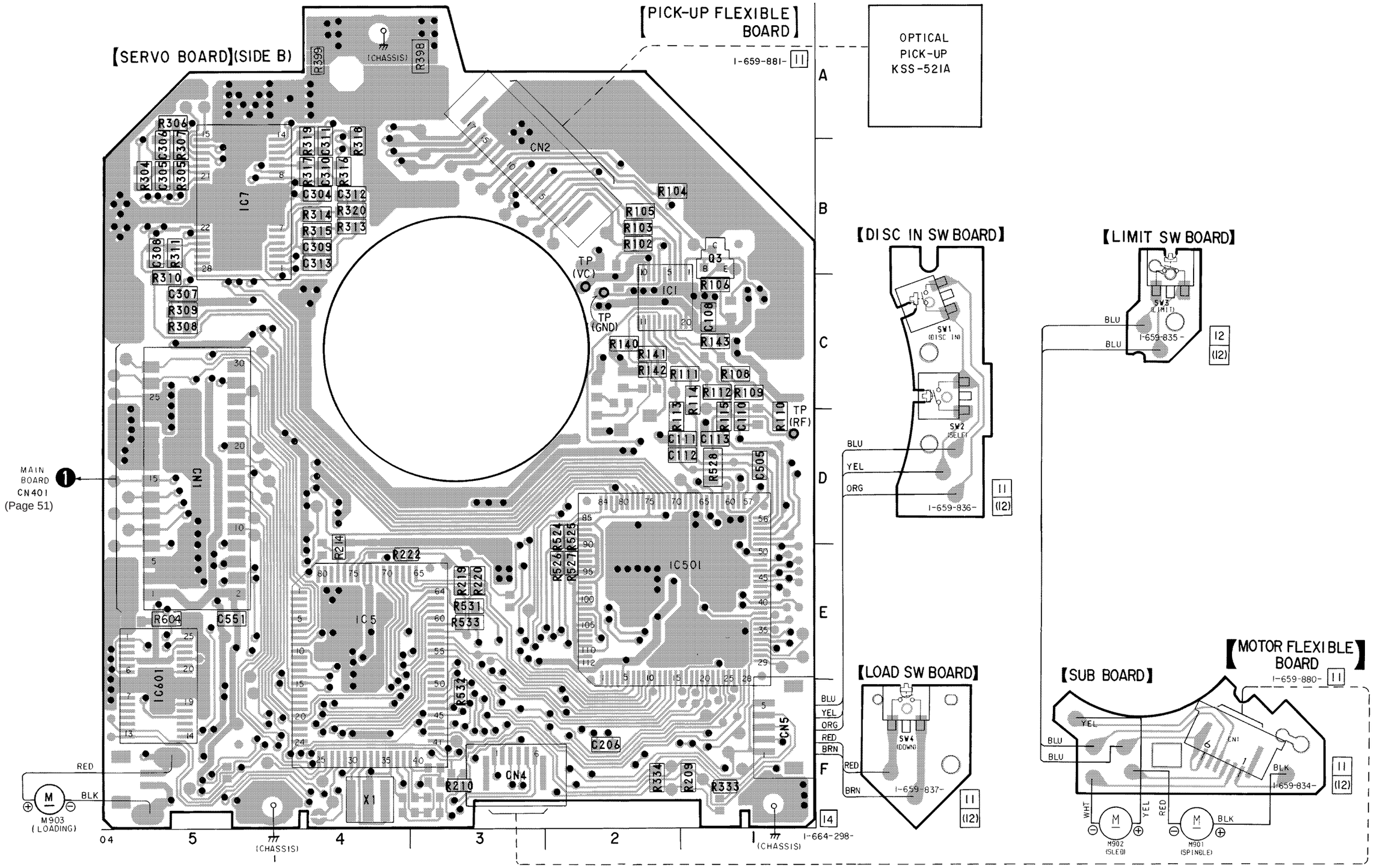
4-9. PRINTED WIRING BOARDS — CD MECHANISM SECTION —

• **Semiconductor Location**

Ref. No.	Location
(IC1)	C-2
IC2	F-2
IC4	F-1
(IC5)	E-4
IC6	F-5
(IC7)	B-5
(IC501)	E-2
IC551	F-5
(IC601)	F-5
Q1	E-4
Q2	E-5
(Q3)	B-1
Q4	E-5
Q5	E-4

( ) : SIDE B




【SERVO BOARD】(SIDE B)
【PICK-UP FLEXIBLE BOARD】
1-659-881- (11)
OPTICAL PICK-UP KSS-521A
【DISC IN SW BOARD】
【LIMIT SW BOARD】
【LOAD SW BOARD】
【SUB BOARD】
【MOTOR FLEXIBLE BOARD】
1-659-880- (11)
MAIN BOARD CN401 (Page 51)
M903 (LOADING)
M902 (SLED)
M901 (SPINDLE)
(CHASSIS)
1-664-298-
1-659-835- (12)
1-659-836- (11) (12)
1-659-837- (11) (12)
1-659-834- (11) (12)
IC1
IC5
IC7
IC501
IC601
CN1
CN2
CN4
CN5
CN401
Q3
X1
TP (VC)
TP (GND)
TP (RF)
SW1 (DISC IN)
SW2 (SELECT)
SW3 (LIMIT)
SW4 (DOWN)
BLU
YEL
ORG
RED
BRN
BLK
WHT

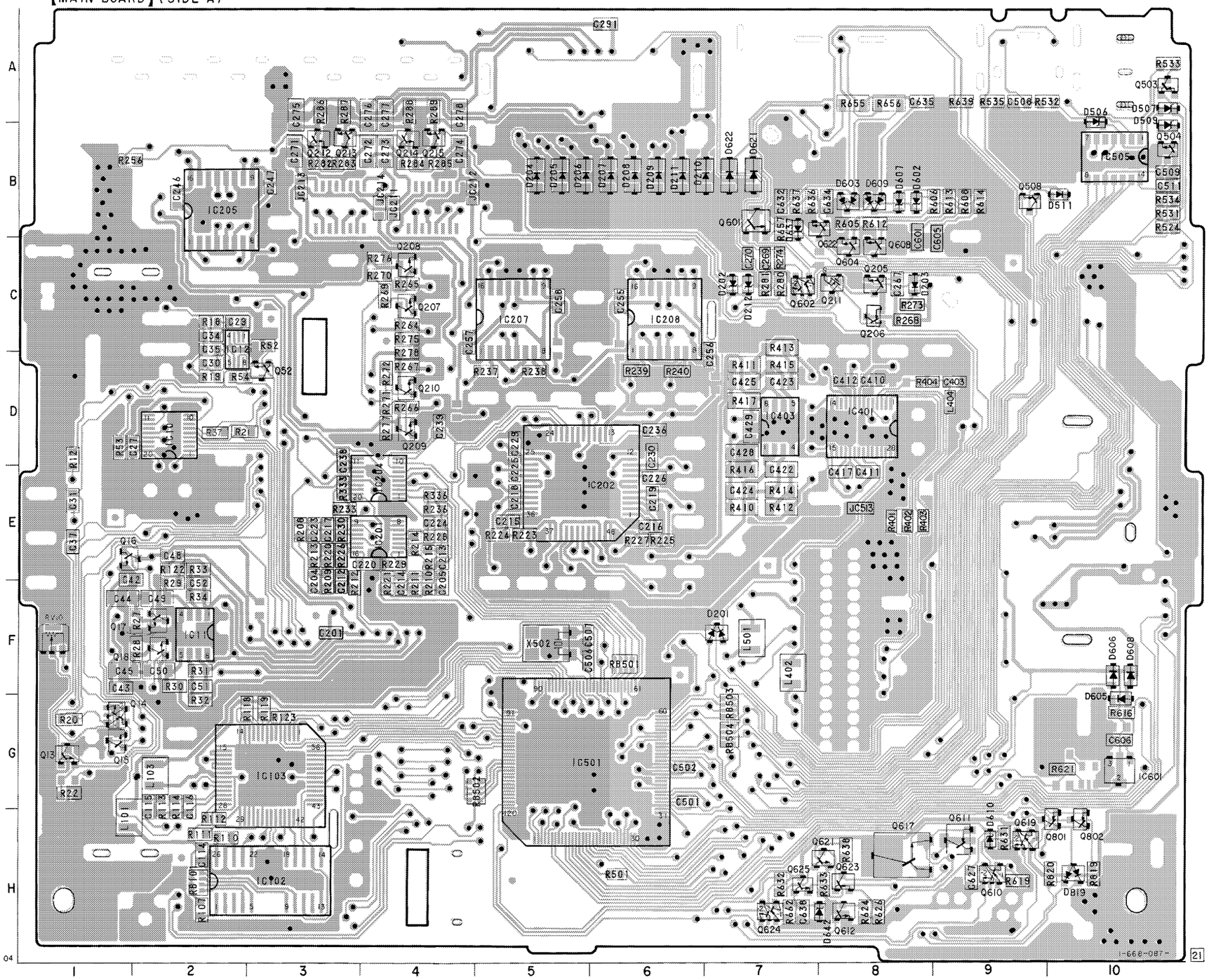
4-10. PRINTED WIRING BOARD — MAIN SECTION —

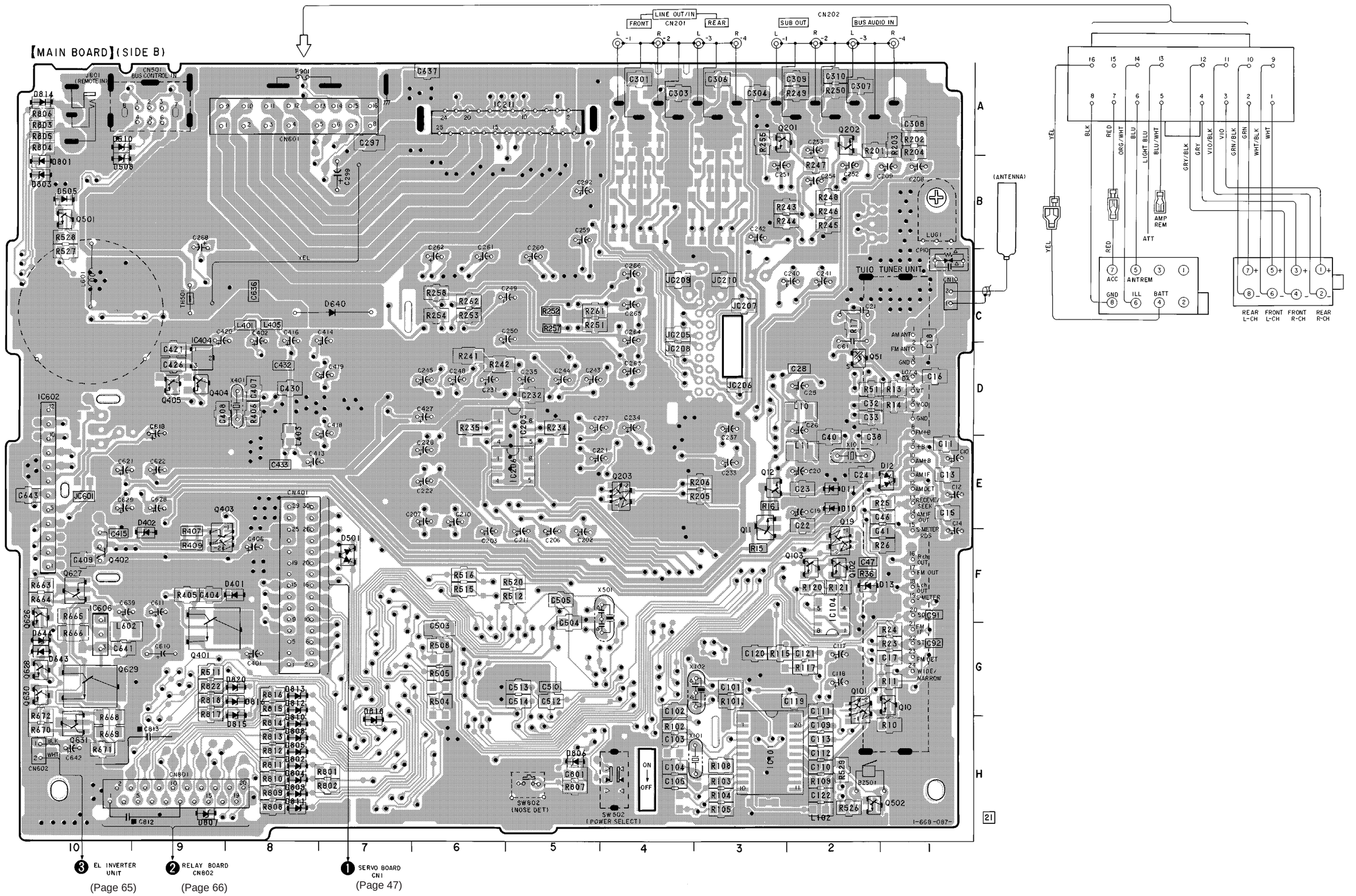
• **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
(D10)	E-2	IC207	C-5
(D11)	E-2	IC208	C-6
(D12)	E-1	(IC211)	A-5
(D13)	F-2	IC401	D-8
D201	F-7	IC403	D-7
D202	C-7	(IC404)	D-9
D203	C-8	IC501	G-5
D204	B-5	IC505	B-10
D205	B-5	IC601	G-10
D206	B-5	(IC602)	E-10
D207	B-6	(IC606)	G-10
D208	B-6		
D209	B-6	(Q10)	G-1
D210	B-6	(Q11)	E-3
D211	B-6	(Q12)	E-3
D212	C-7	Q13	G-1
(D401)	F-8	Q14	G-1
(D402)	F-9	Q15	G-1
(D501)	F-7	Q16	E-1
(D505)	B-10	Q17	F-2
D506	A-10	Q18	F-2
D507	A-10	(Q19)	F-2
(D508)	A-10	(Q51)	D-2
D509	B-10	Q52	D-3
(D510)	A-10	(Q101)	G-2
D511	B-10	(Q102)	F-2
D602	B-8	(Q103)	F-2
D603	B-8	(Q201)	A-3
D605	G-10	(Q202)	A-2
D606	F-10	(Q203)	E-4
D607	B-8	Q205	C-8
D608	F-10	Q206	C-8
D609	B-8	Q207	C-4
D610	H-9	Q208	C-4
D621	B-7	Q209	D-4
D622	B-7	Q210	D-4
D637	B-7	Q211	C-8
(D640)	C-7	Q212	B-3
D642	H-8	Q213	B-3
(D643)	G-10	Q214	B-4
(D644)	G-10	Q215	B-4
(D801)	B-10	(Q401)	G-9
(D802)	H-8	(Q402)	F-10
(D803)	B-10	(Q403)	F-9
(D804)	H-8	(Q404)	D-9
(D805)	H-8	(Q405)	D-9
(D806)	H-5	(Q501)	B-10
(D807)	H-9	(Q502)	H-1
(D808)	H-8	Q503	A-10
(D809)	H-8	Q504	B-10
(D810)	H-8	Q508	B-9
(D811)	H-8	Q601	B-7
(D812)	G-8	Q602	C-7
(D813)	G-8	Q604	C-8
(D814)	A-10	Q608	C-8
(D815)	H-8	Q610	H-9
(D816)	G-8	Q611	H-9
(D818)	H-7	Q612	H-8
D819	H-10	Q617	H-8
(D820)	G-8	Q619	H-9
		Q621	H-8
IC10	D-2	Q622	B-8
IC11	F-2	Q623	H-8
IC12	C-2	Q624	H-7
(IC101)	H-3	Q625	H-7
IC102	H-3	(Q626)	F-10
IC103	G-3	(Q627)	F-10
IC104	F-2	(Q628)	G-10
IC201	E-4	(Q629)	G-10
IC202	E-5	(Q630)	G-10
(IC203)	D-5	(Q631)	H-10
IC204	E-4	Q801	H-10
IC205	B-2	Q802	H-10
(IC206)	E-5		

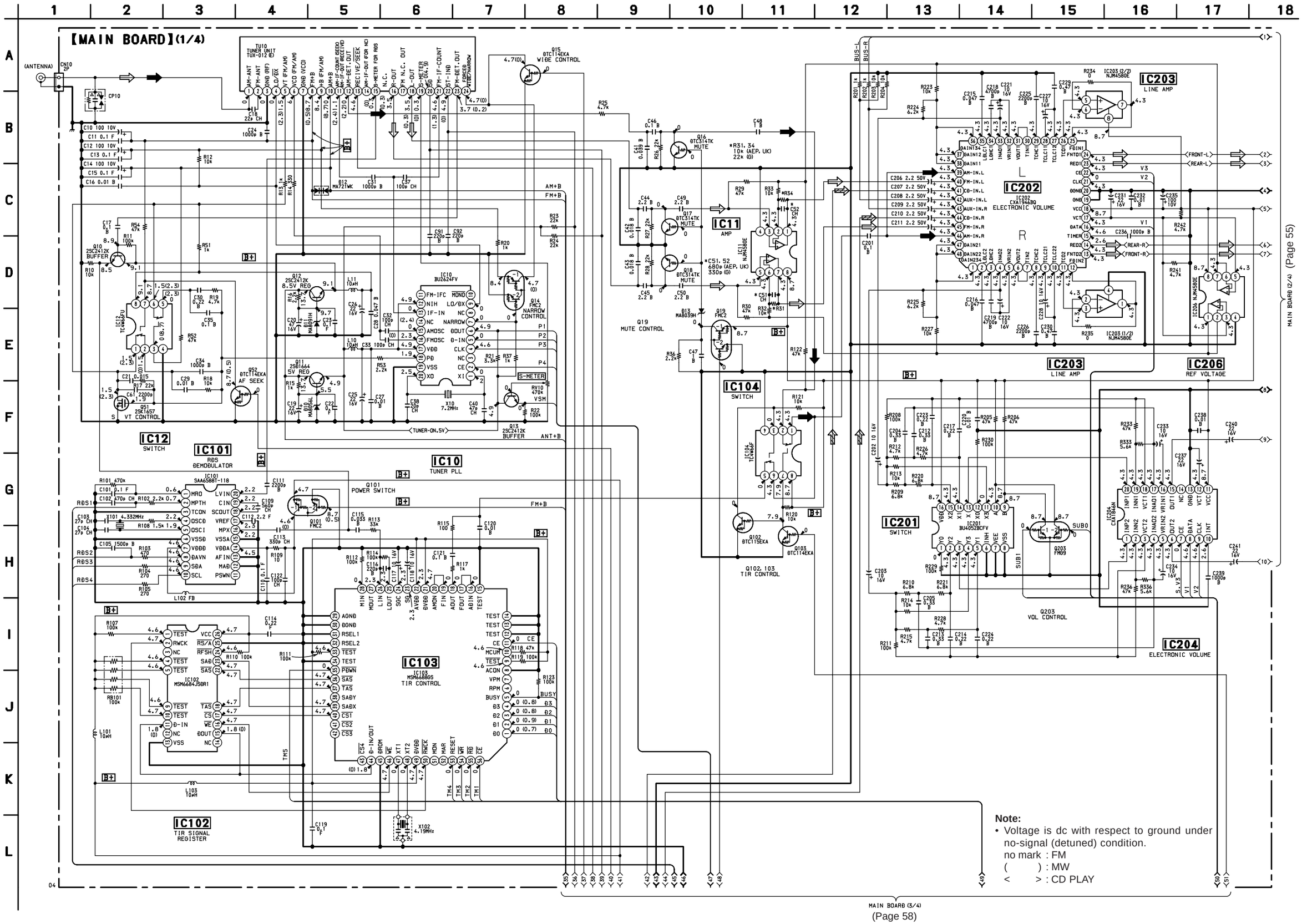
( ) : SIDE B

【MAIN BOARD】(SIDE A)




【MAIN BOARD】(SIDE B)
CN202
LINE OUT/IN
FRONT
REAR
CN201
SUB OUT
BUS AUDIO IN
(ANTENNA)
TUIQ TUNER UNIT
AMP REM
ATT
ANTREM
ACC
GND
ILL
BATT
REAR L-CH
FRONT L-CH
FRONT R-CH
REAR R-CH
YEL
BLK
RED
ORG/WHT
BLU
LIGHT BLU
BLU/WHT
GRY/BLK
GRY
VIO/BLK
VIO
GRN/BLK
GRN
WHT/BLK
WHT
CN602
CN501
BUS CONTROL IN
JB01
(REMOTE IN)
CN601
CN801
CN401
SW502
(POWER SELECT)
SW602
(NOSE DET)
ON
OFF
I-668-087-
21
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
3 EL INVERTER UNIT
(Page 65)
2 RELAY BOARD CN802
(Page 66)
1 SERVO BOARD CN1
(Page 47)

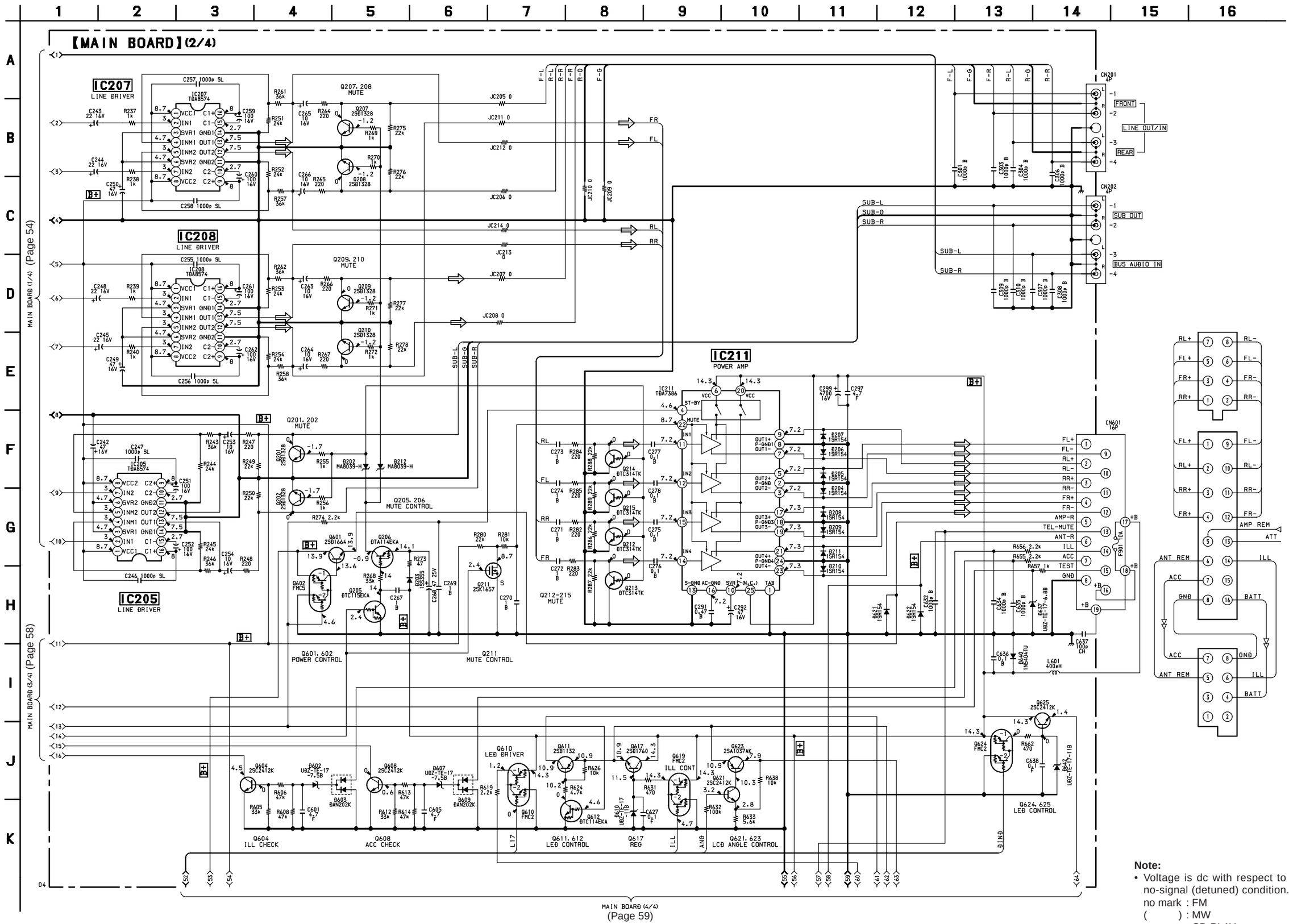
4-11. SCHEMATIC DIAGRAM — MAIN SECTION (1/4) — • Refer to page 70 for IC Block Diagrams.



Note:

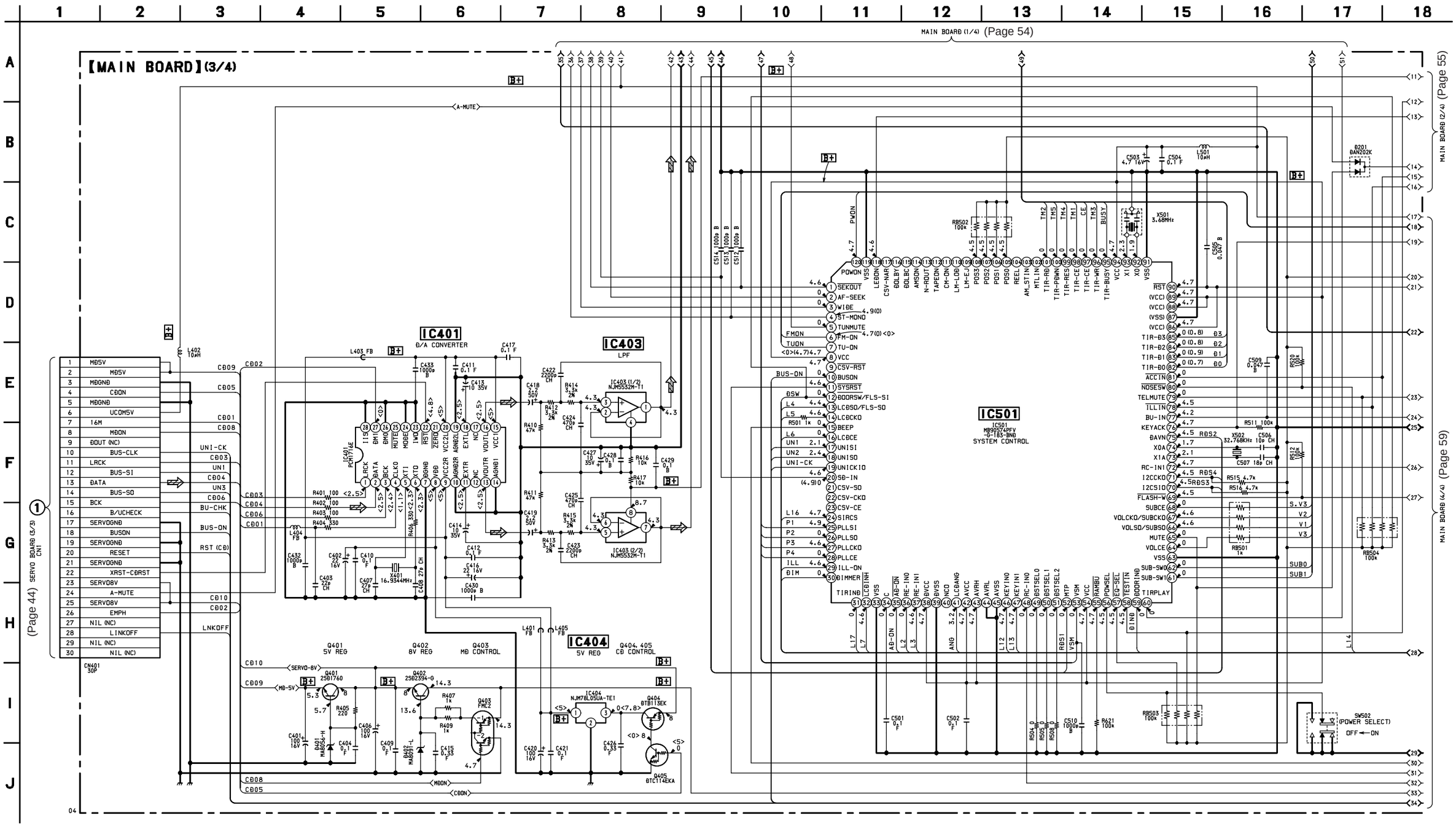
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : MW
  < > : CD PLAY

4-12. SCHEMATIC DIAGRAM — MAIN SECTION (2/4) — • Refer to page 70 for IC Block Diagrams.



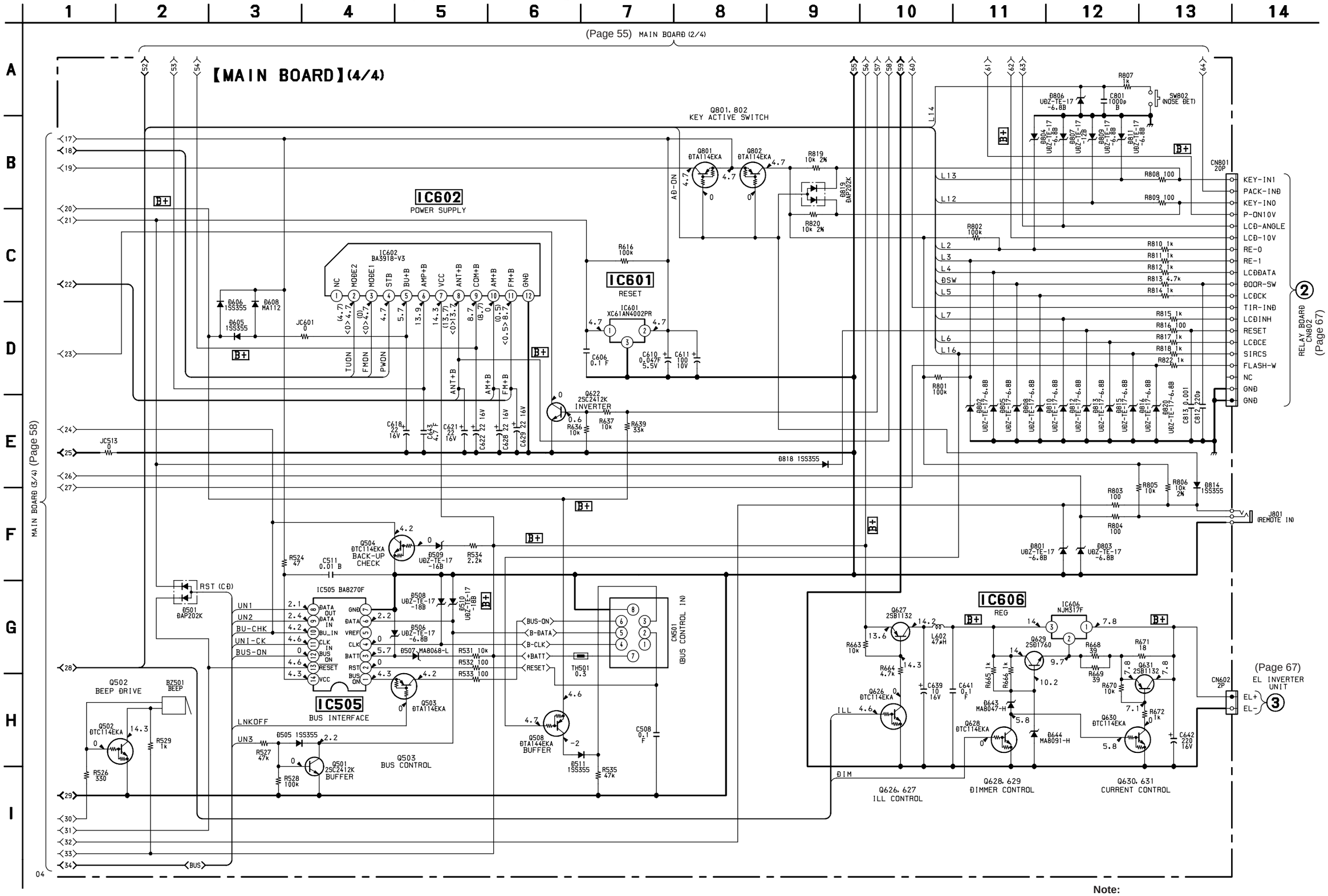
Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : MW
  < > : CD PLAY

4-13. SCHEMATIC DIAGRAM — MAIN SECTION (3/4) — • Refer to page 72 for IC Block Diagrams.



Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : MW
  < > : CD PLAY

4-14. SCHEMATIC DIAGRAM — MAIN SECTION (4/4) — • Refer to page 70 for IC Block Diagrams.



Note:

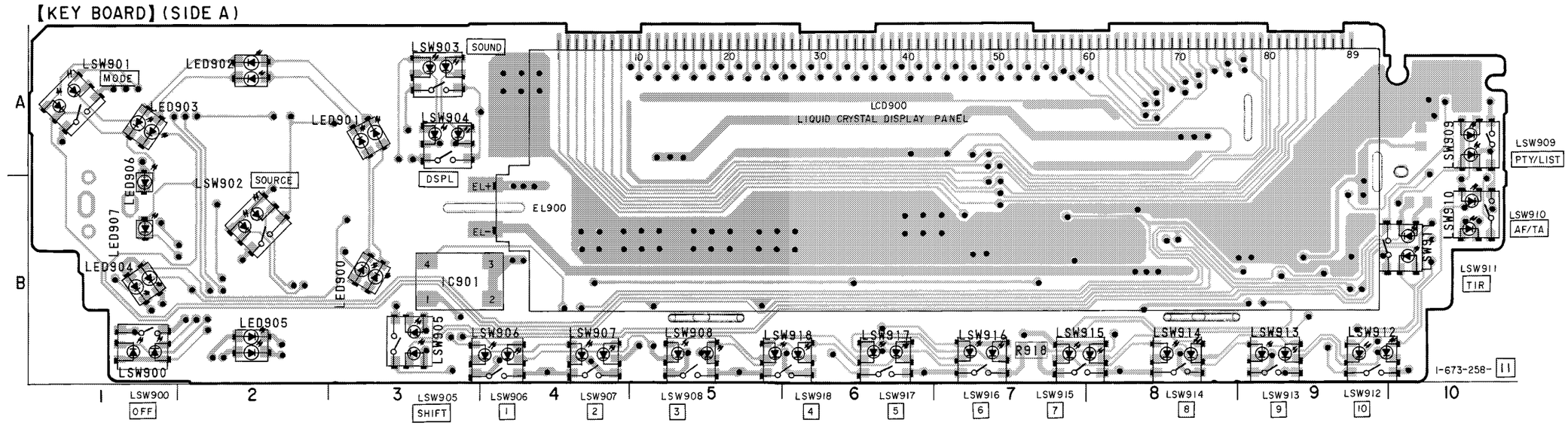
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : MW
  < > : CD PLAY

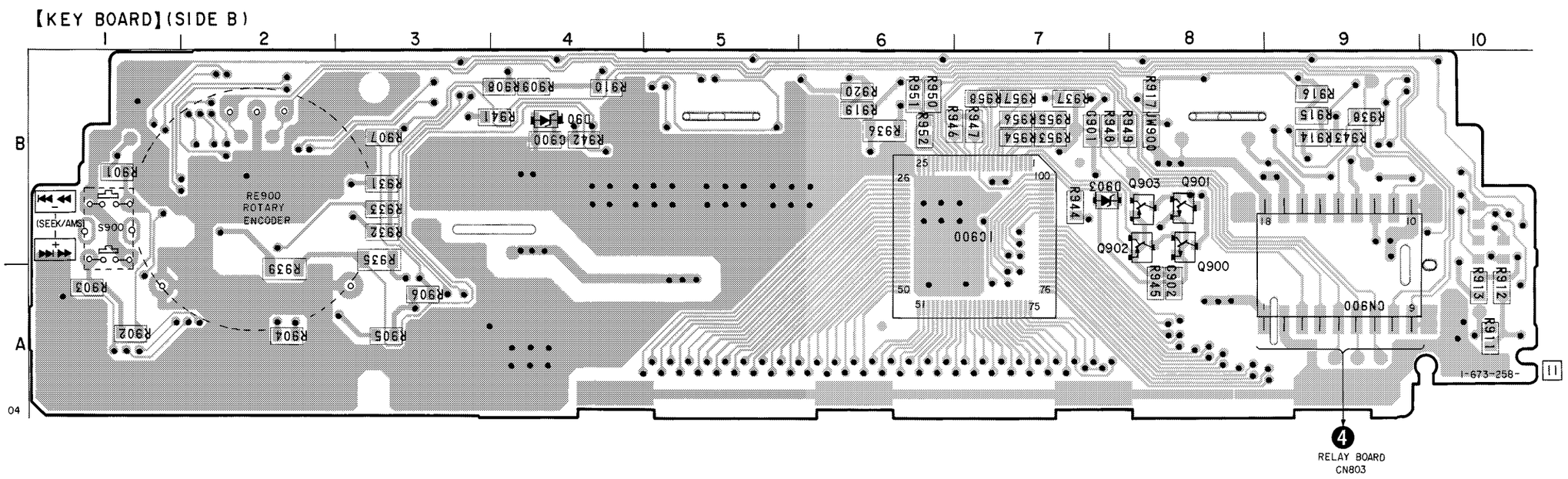
4-15. PRINTED WIRING BOARD — DISPLAY SECTION —

- **Semiconductor Location**

Ref. No.	Location
(D901)	B-4
(D903)	B-8
(IC900)	B-7
IC901	B-3
LED900	B-3
LED901	A-3
LED902	A-2
LED903	A-1
LED904	B-1
LED905	B-2
LED906	B-1
LED907	B-1
(Q900)	B-8
(Q901)	B-8
(Q902)	B-8
(Q903)	B-8

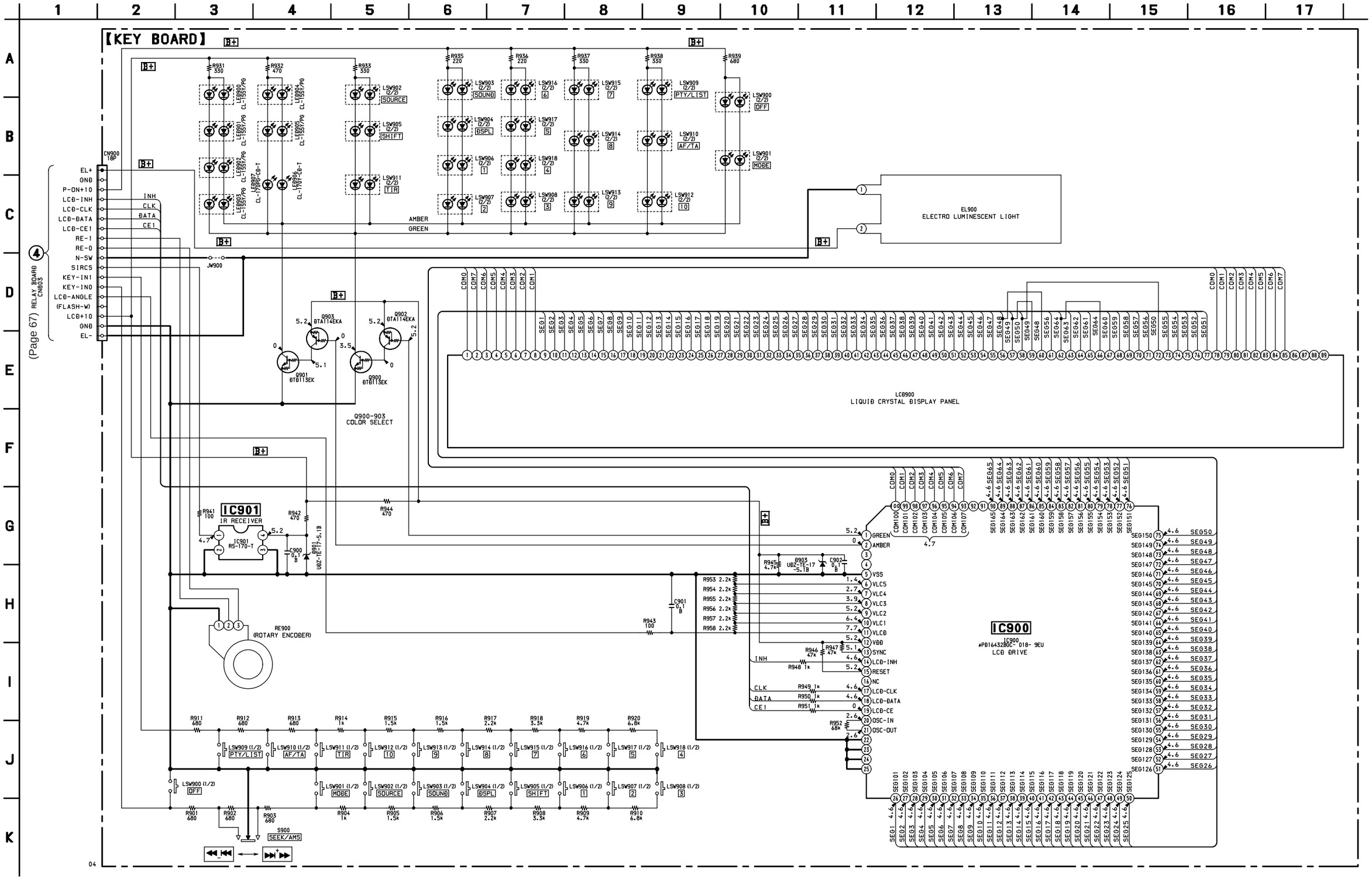
( ) : SIDE B





(Page 66)

4-16. SCHEMATIC DIAGRAM — DISPLAY SECTION —

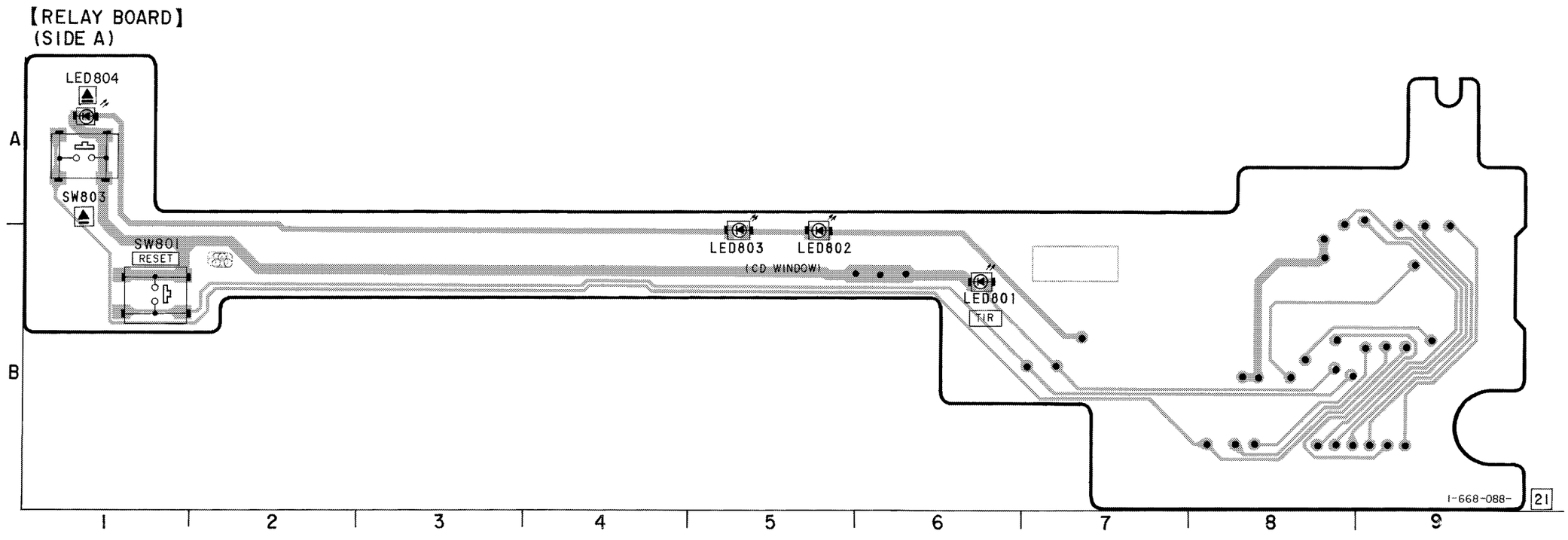


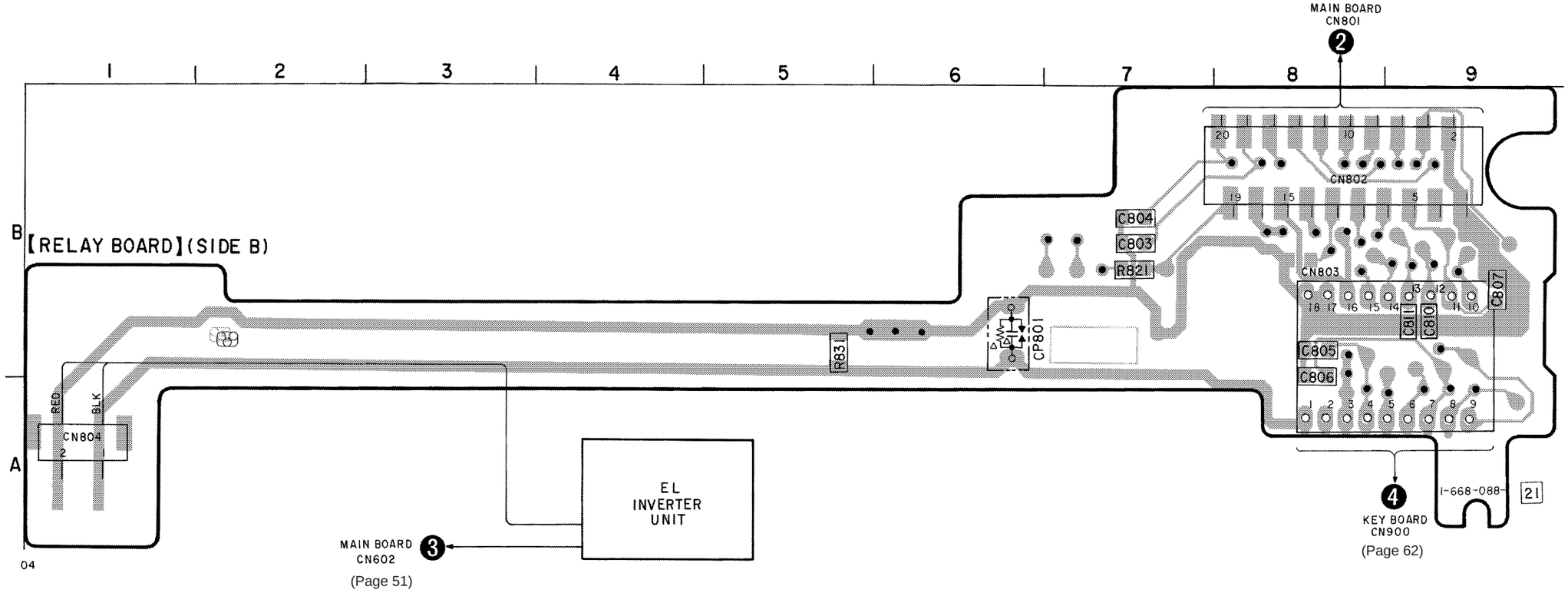
Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

4-17. PRINTED WIRING BOARD — RELAY SECTION —

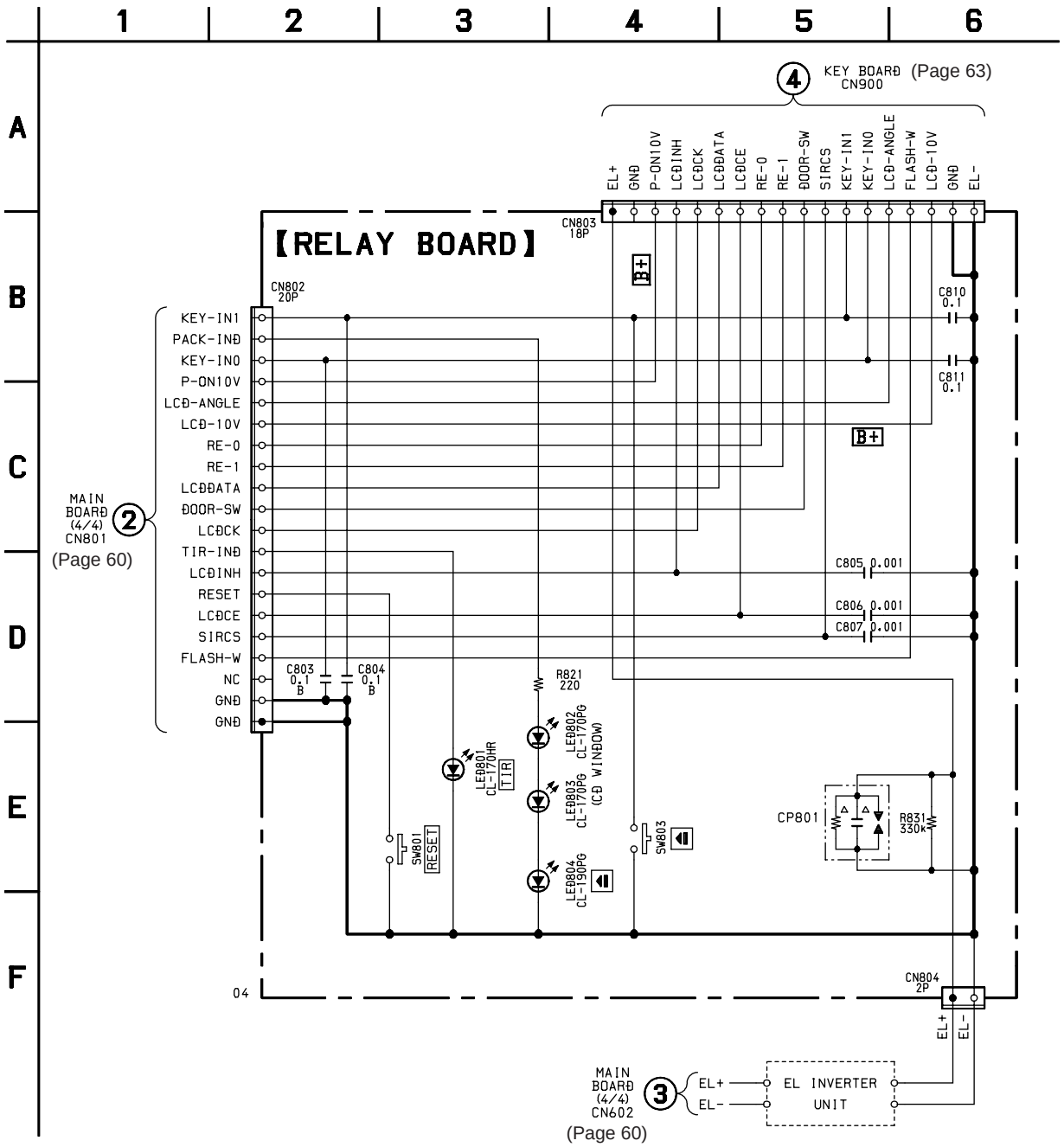
- **Semiconductor Location**

Ref. No.	Location
LED801	B-6
LED802	B-5
LED803	B-5
LED804	A-1



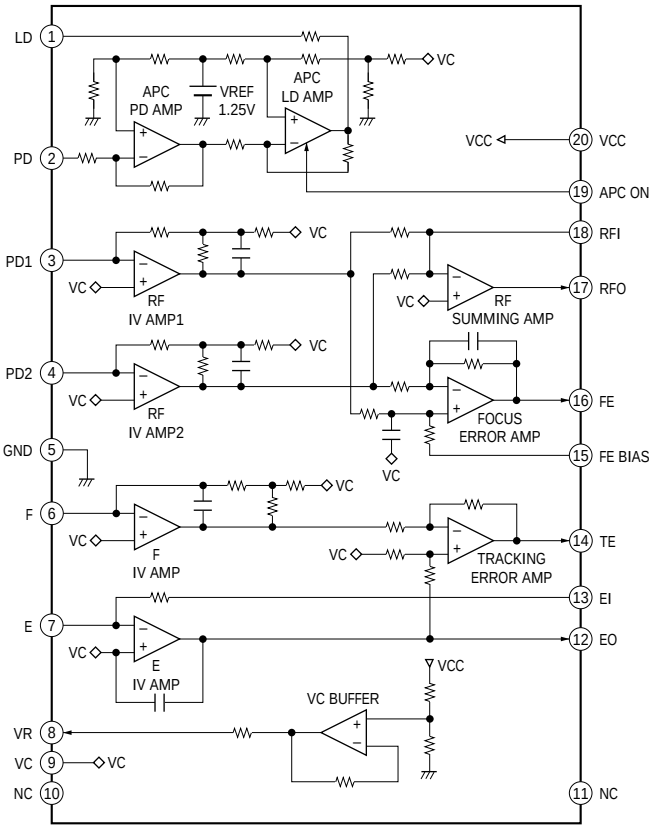


4-18. SCHEMATIC DIAGRAM — RELAY SECTION —

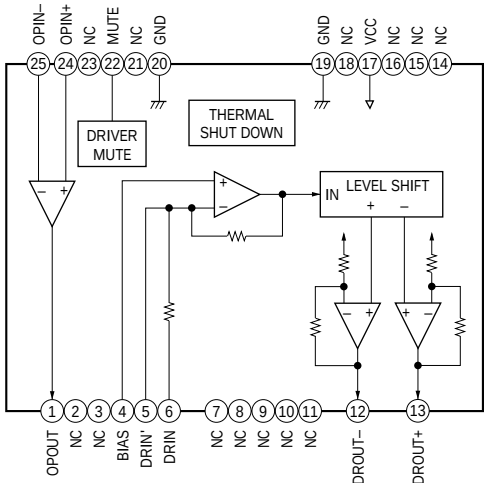


• **IC Block Diagrams**

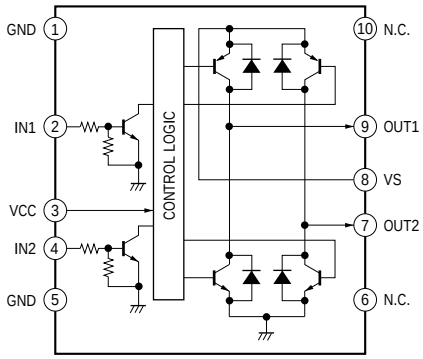
IC1 CXA1791N-T4



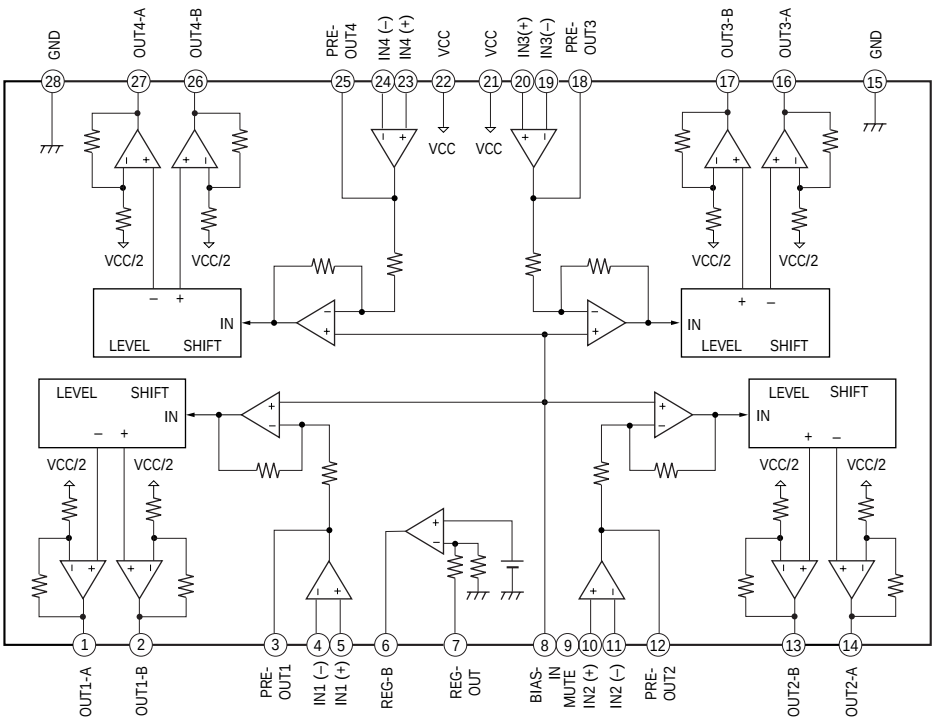
IC601 BA6195FP-YT2



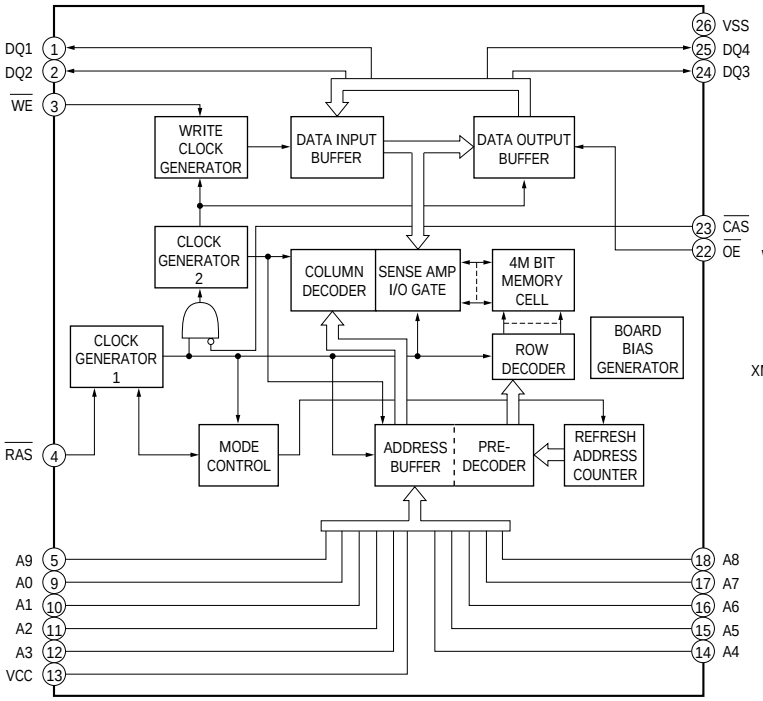
IC6 LB1638MTP-T1



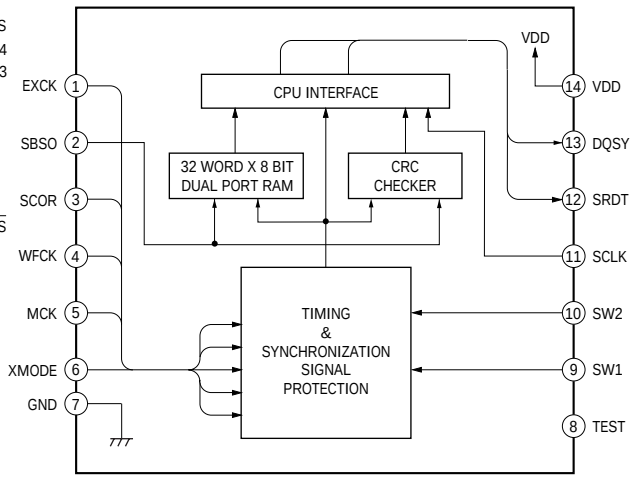
IC7 BA6797FP-E2



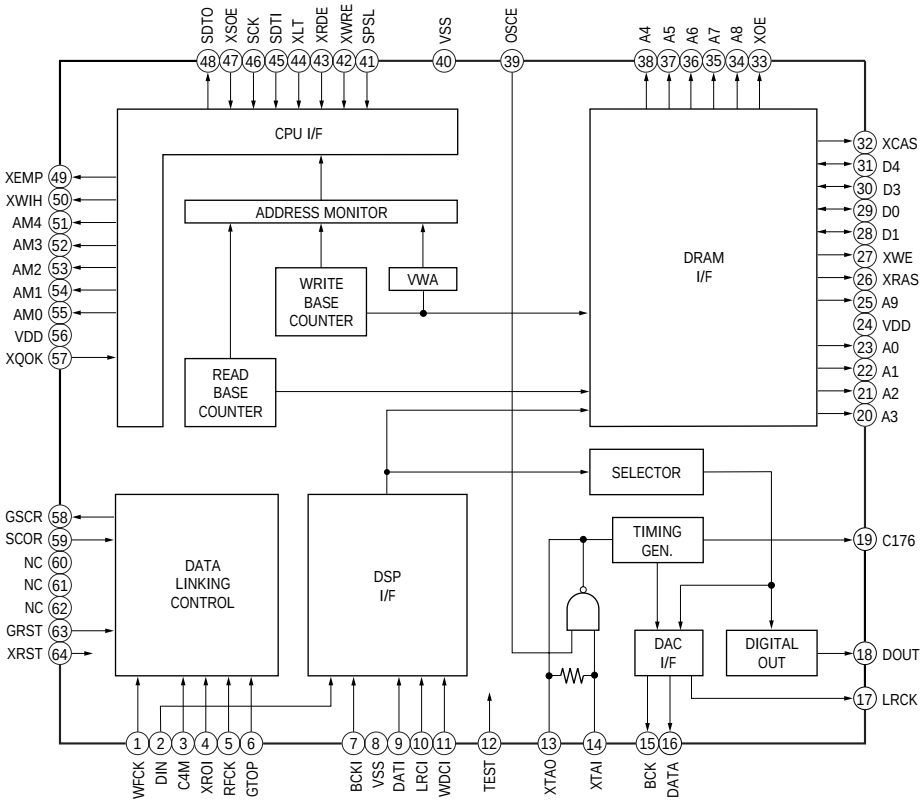
IC4 MB814400C-70PFTN



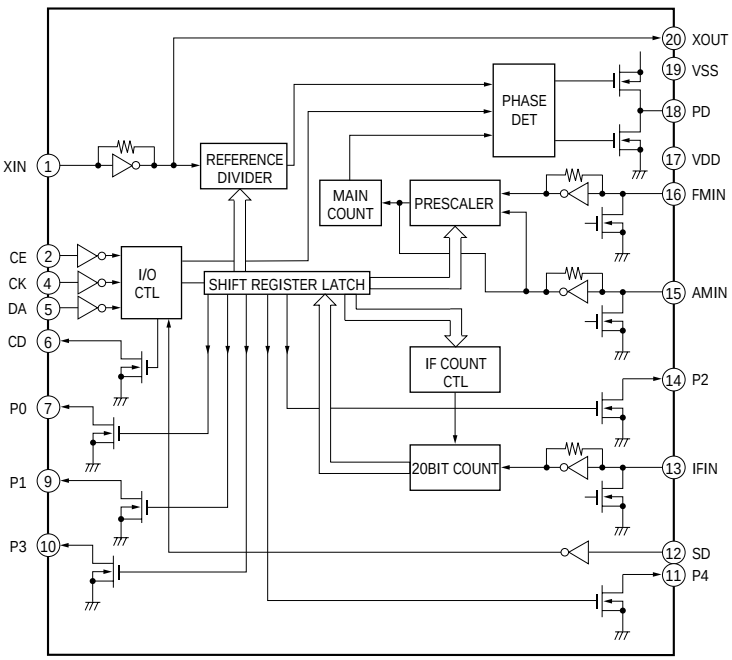
IC551 LC89170M-TLM



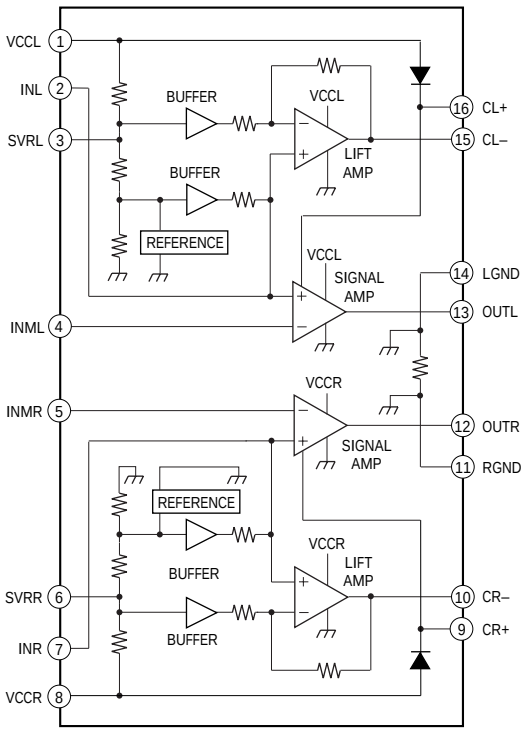
IC2 CXD2522R-T6



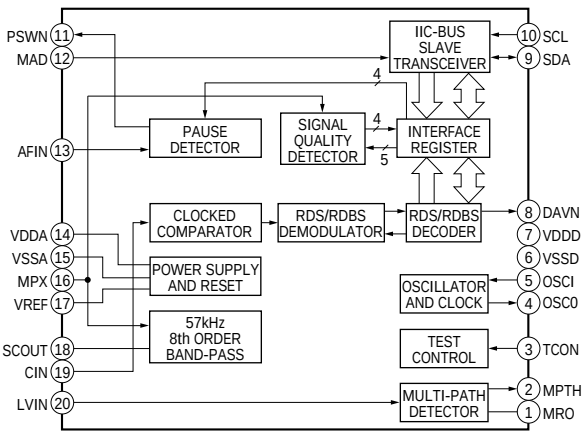
IC10 BU2624FV



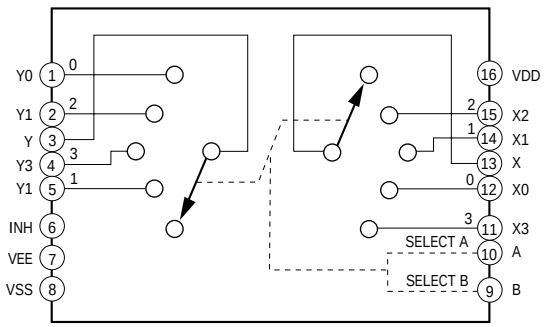
IC205, 207, 208 TDA8574



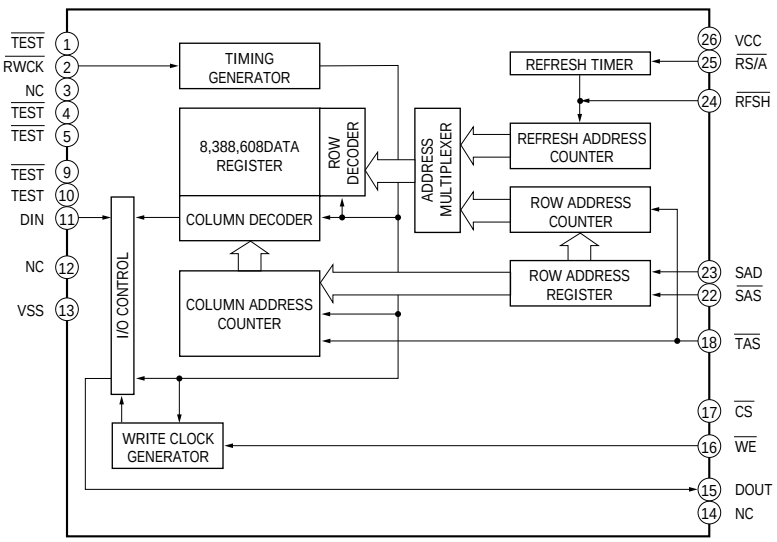
IC101 SAA6588T



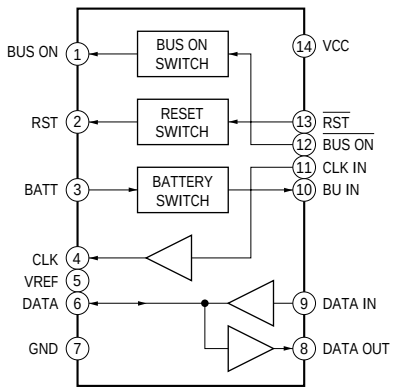
IC201 BU4052BCFV



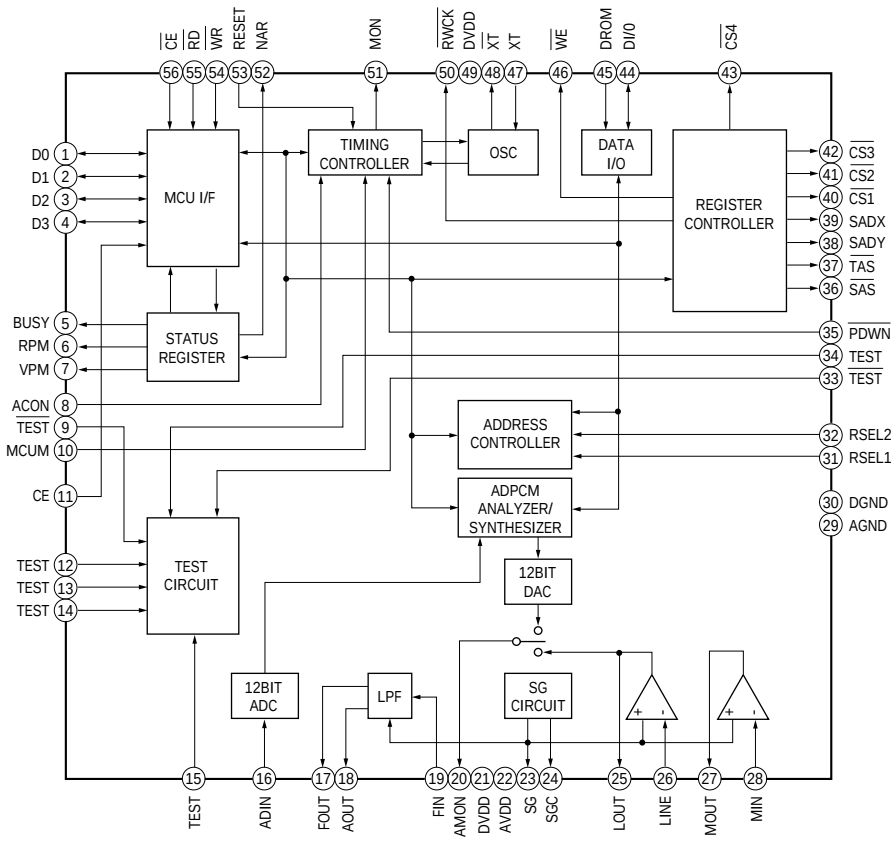
IC102 MSM6684JSDR1



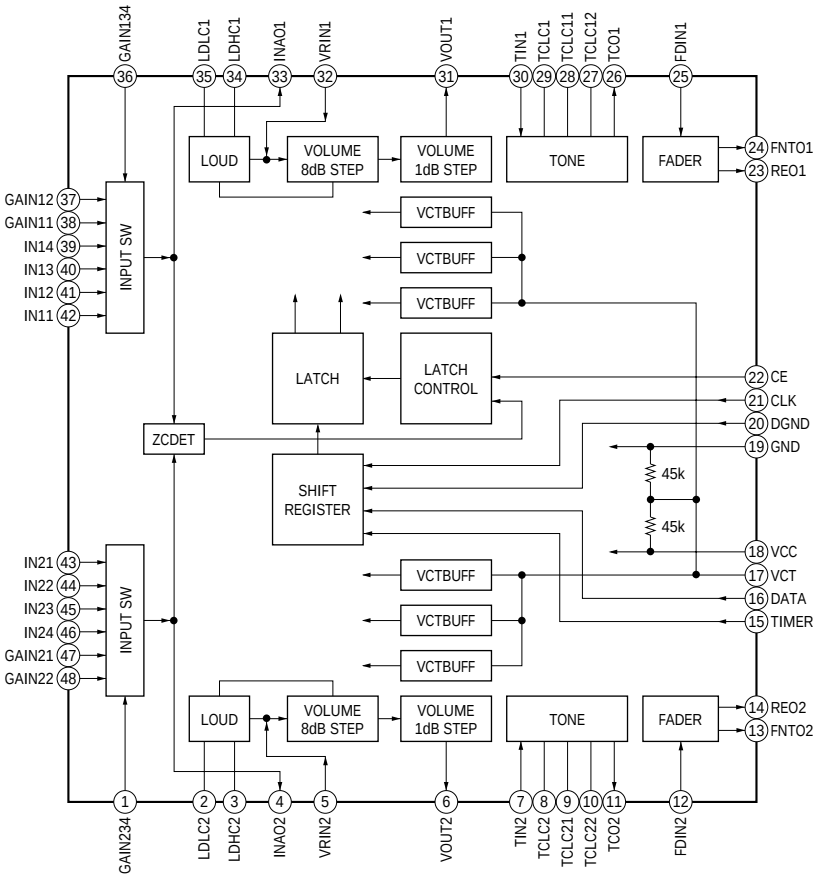
IC505 BA8270F



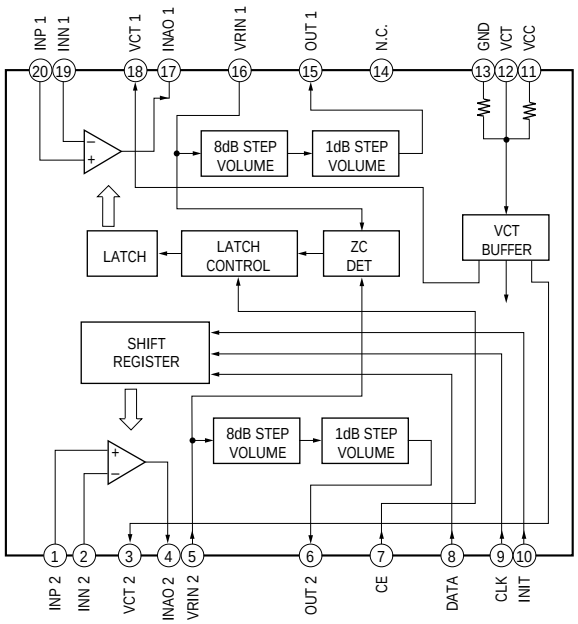
IC103 MSM6688GS



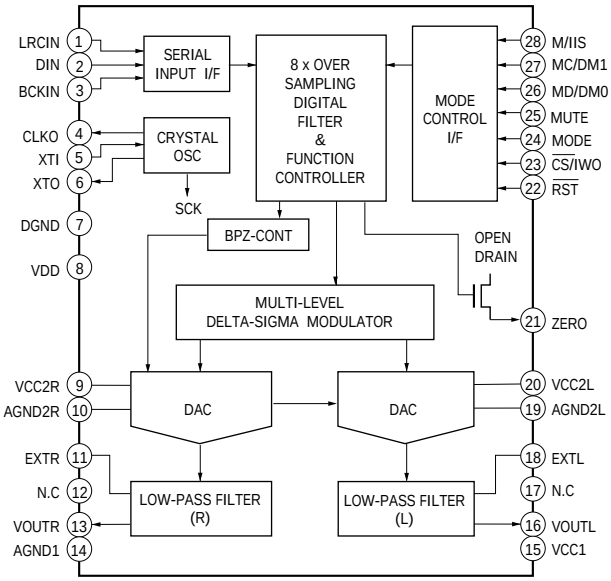
IC202 CXA1946BQ



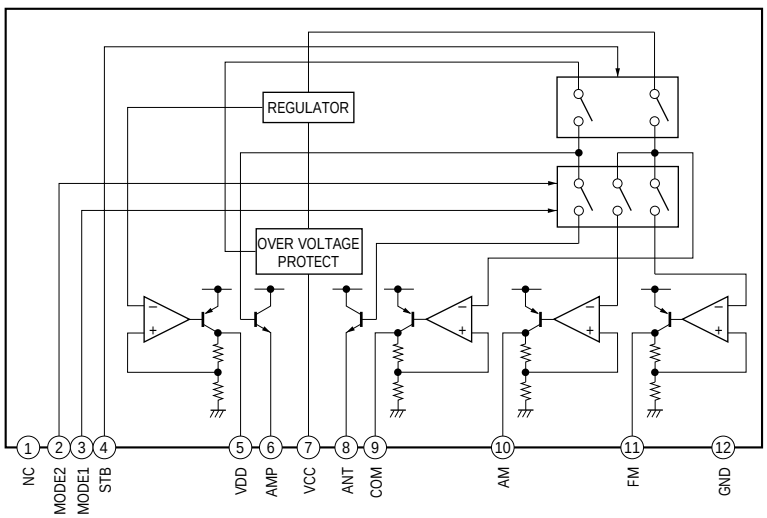
IC204 CXA1846N



IC401 PCM1716E



IC602 BA3918-V3



SECTION 5
EXPLODED VIEWS

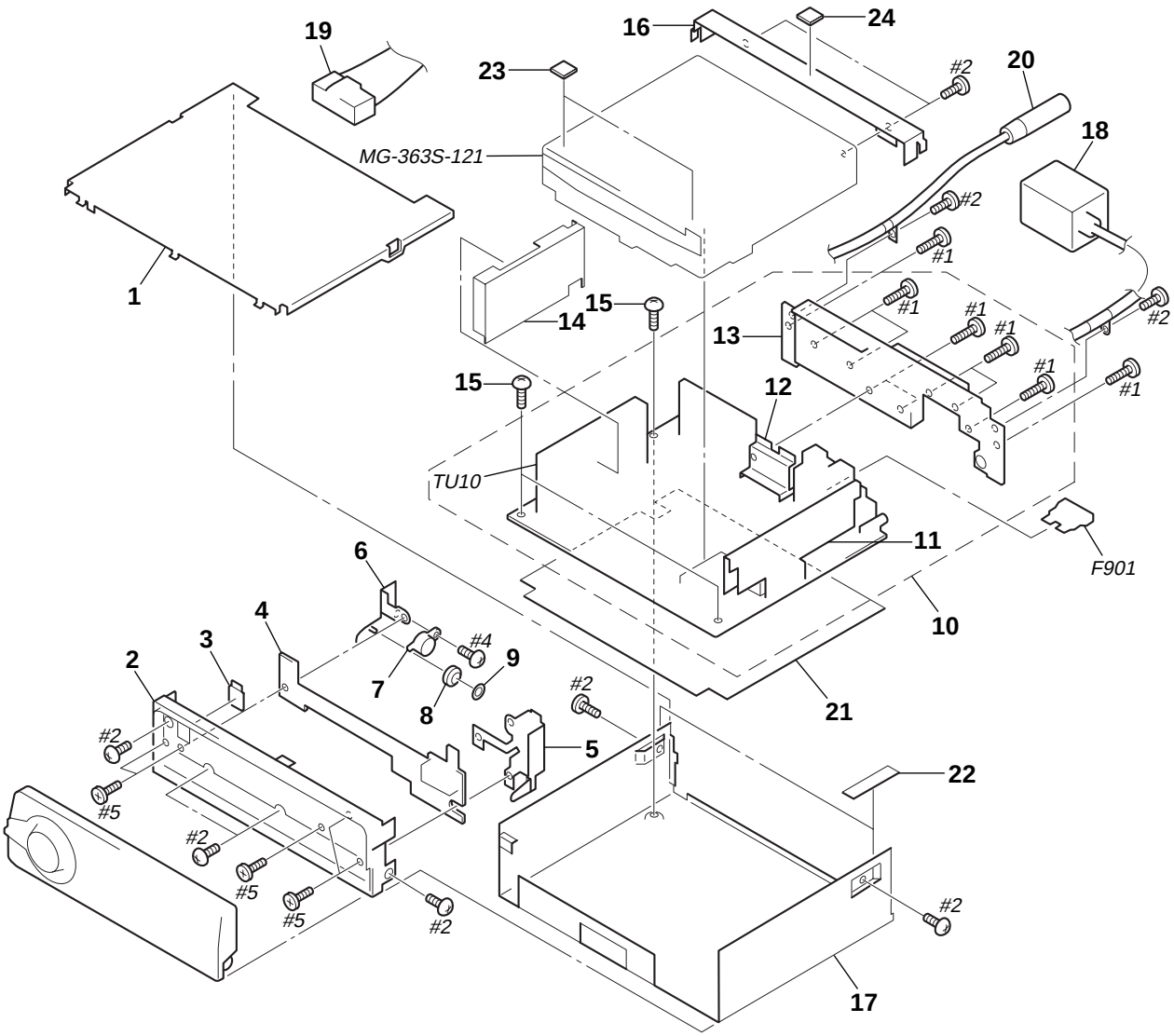
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

- Abbreviation
  G : German model

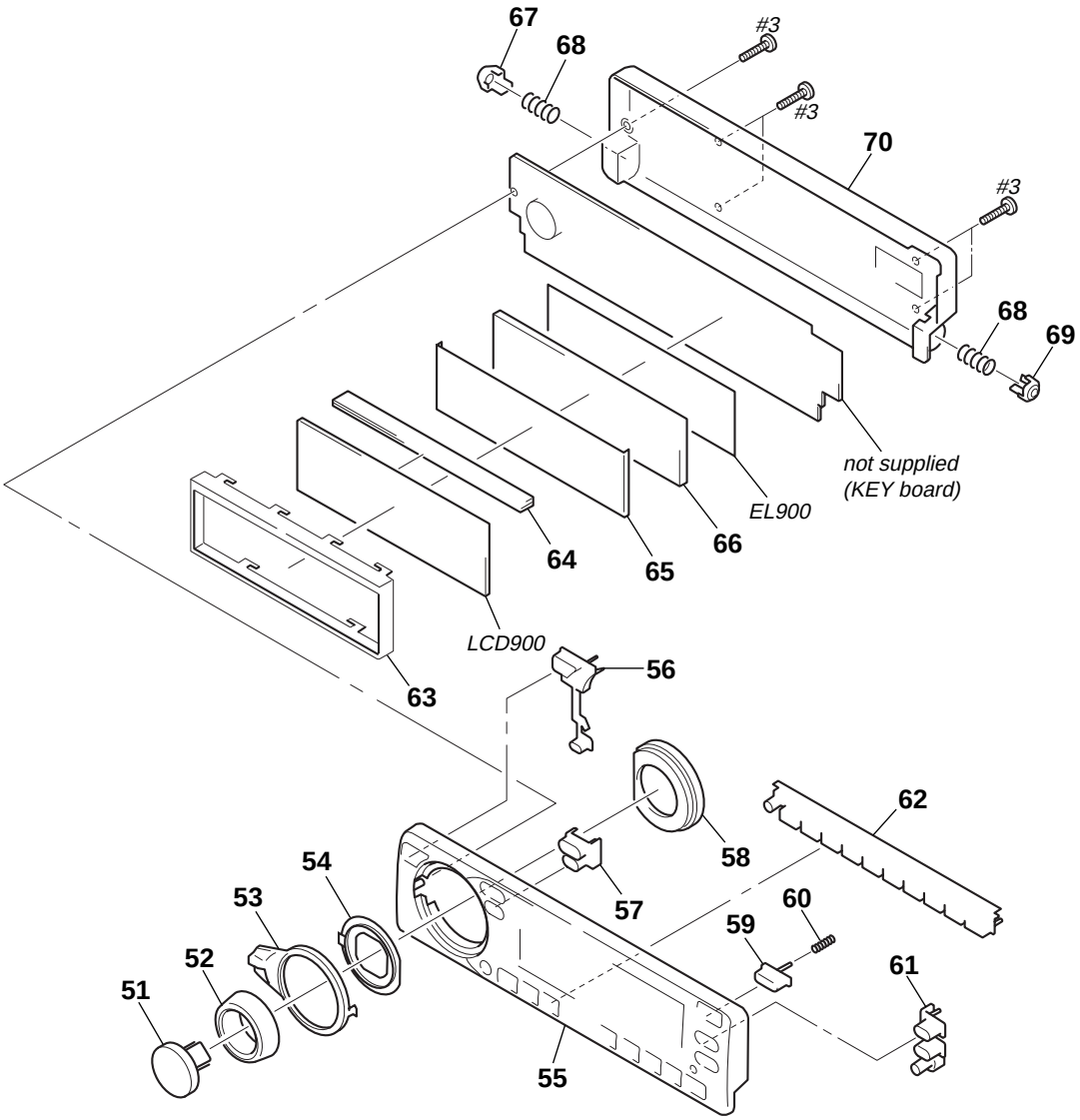
5-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	3-022-316-11	COVER	
2	X-3375-070-1	PANEL ASSY, SUB	
3	3-022-338-01	BUTTON (EJECT)	
* 4	1-668-088-21	RELAY BOARD	
5	X-3375-068-1	LOCK ASSY	
6	X-3375-066-1	BRACKET (GEAR) ASSY	
7	3-953-235-01	DAMPER, OIL	
8	3-011-170-01	GEAR (HOLDER)	
9	3-341-752-11	WASHER, POLYETHYLENE	
* 10	A-3294-672-A	MAIN BOARD, COMPLETE (AEP,UK)	
* 10	A-3294-675-A	MAIN BOARD, COMPLETE (G)	
* 11	3-014-819-01	HEAT SINK (REG2)	
* 12	3-022-317-11	BRACKET (AMP)	
* 13	3-022-336-01	HEAT SINK	

Ref. No.	Part No.	Description	Remark
* 14	3-031-812-01	PLATE (TUX-B), SHIELD	
15	3-915-923-01	SCREW, GROUND POINT	
16	3-022-335-01	BRACKET (MD)	
17	3-022-311-01	CHASSIS	
18	1-475-684-11	INVERTER UNIT, EL	
19	1-776-527-71	CORD (WITH CONNECTOR) (ISO) (POWER)	
20	1-777-246-21	CORD (WITH CONNECTOR) (ANTENNA)	
21	3-023-539-02	SHEET (INSULATING)	
22	3-831-441-99	CUSHION (SP)	
* 23	4-871-306-02	RUBBER (A)	
* 24	3-016-299-01	CUSHION	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
TU10	A-3282-045-A	TUNER UNIT (TUX-012(E))	

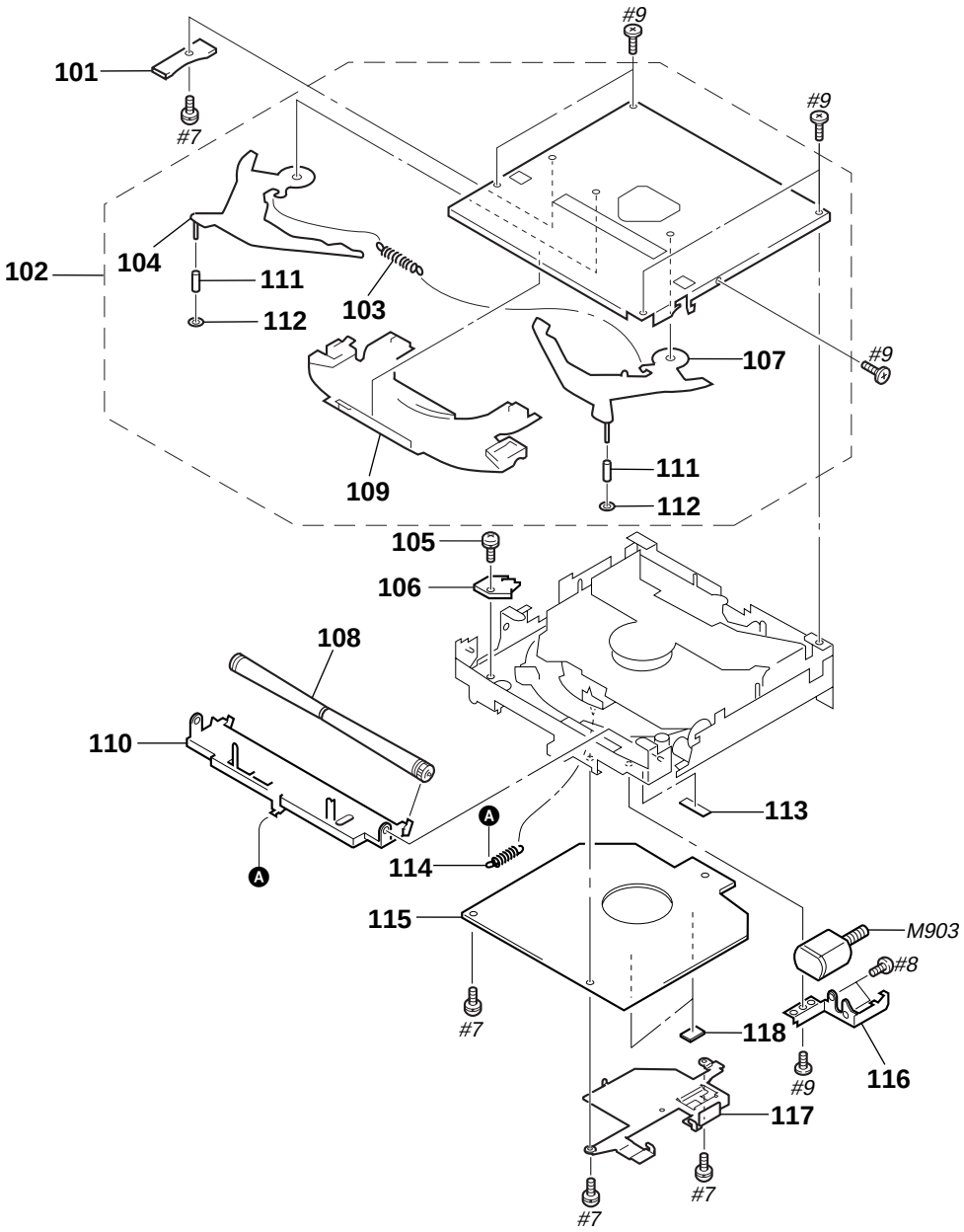
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-022-329-21	BUTTON (SOURCE)	
52	3-033-667-01	KNOB (VOL)	
53	3-022-323-31	LEVER (SHUTTLE)	
* 54	3-030-648-01	PLATE (RING), LIGHT GUIDE	
55	X-3377-447-1	PANEL SUB ASSY, FRONT	
56	3-022-330-11	BUTTON (MODE)	
57	3-022-331-01	BUTTON (SOUND)	
58	3-022-324-02	PLATE (SHUTTLE), LIGHT GUIDE	
59	3-022-333-01	BUTTON (OPEN)	
60	3-932-225-01	SPRING (OPEN)	
61	3-022-308-01	BUTTON (PTY)	

Ref. No.	Part No.	Description	Remark
62	3-022-332-01	BUTTON (10 KEY)	
63	3-022-327-01	PLATE (LCD), GROUND	
64	1-694-414-11	CONDUCTOR BOARD, CONNECTION	
* 65	3-034-558-01	ILLUMINATOR (LCD)	
* 66	3-022-326-03	PLATE (LCD), LIGHT GUIDE	
67	3-010-999-01	BEARING (L)	
68	3-010-998-01	SPRING (BEARING)	
69	3-011-000-01	BEARING (R)	
70	3-022-319-03	PANEL, FRONT BACK	
EL900	1-517-766-11	LIGHT, ELECTRO LUMINESCENT	
LCD900	1-803-504-11	DISPLAY PANEL, LIQUID CRYSTAL	

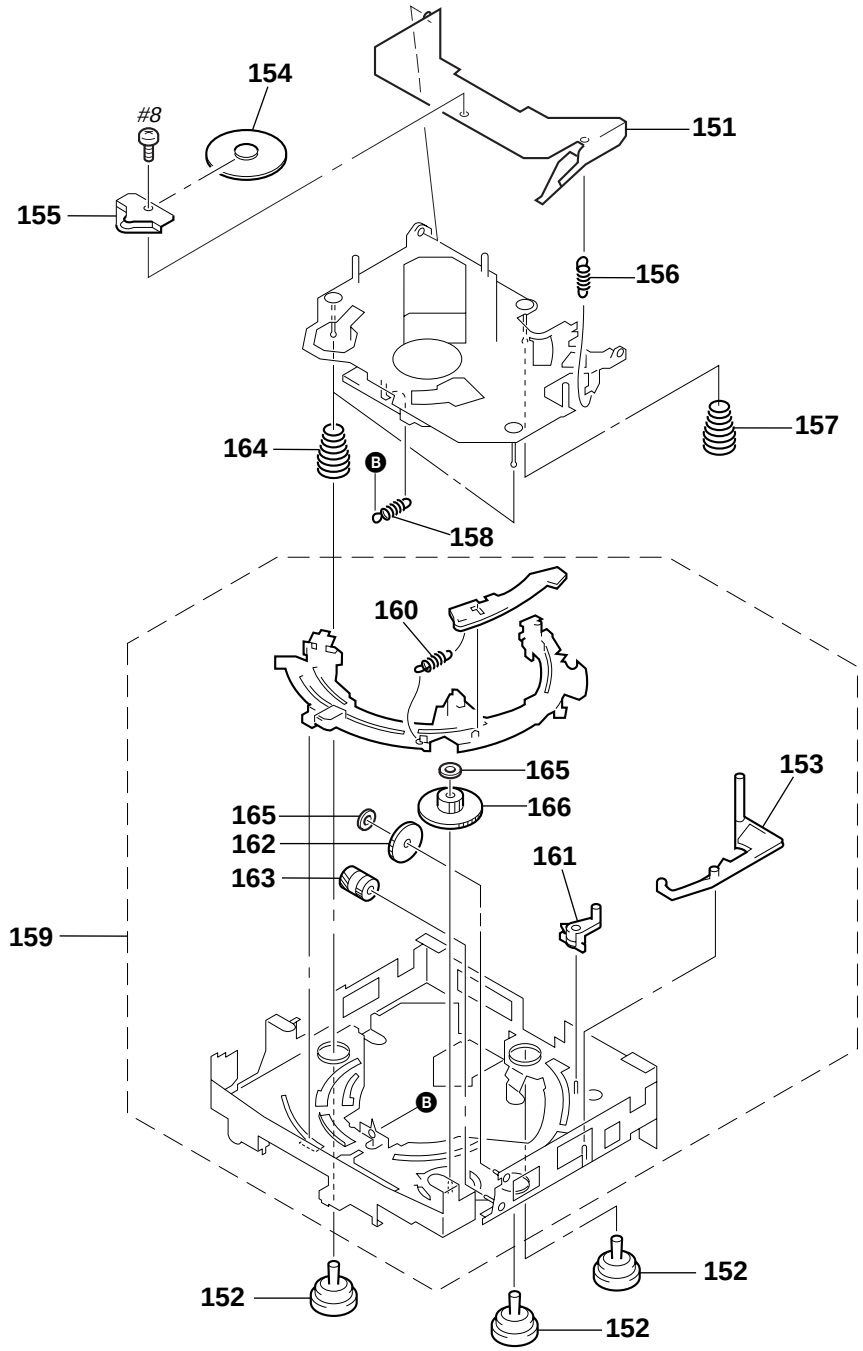
5-3. CD MECHANISM SECTION (1)
(MG-363S-121)



Ref. No.	Part No.	Description	Remark
* 101	1-659-836-11	DISC IN SW BOARD	
* 102	A-3291-816-B	CHASSIS (T) SUB ASSY	
103	3-931-909-01	SPRING (LR), TENSION	
104	X-3371-501-1	LEVER (L) ASSY	
105	3-338-737-01	SCREW (2X3), + PS	
* 106	1-659-837-11	LOAD SW BOARD	
107	X-3371-502-1	LEVER (R) ASSY	
108	A-3301-203-A	ROLLER ASSY	
109	3-931-908-01	GUIDE (DISC)	
110	3-931-902-04	ARM (ROLLER)	

Ref. No.	Part No.	Description	Remark
111	3-936-756-01	ROLLER (D)	
112	3-321-393-01	WASHER, STOPPER	
* 113	3-939-139-01	SPACER	
114	3-931-916-01	SPRING (RA), TENSION	
* 115	A-3313-381-A	SERVO BOARD, COMPLETE	
* 116	3-007-530-01	BRACKET (MOTOR)	
* 117	3-023-537-02	HEAT SINK	
* 118	3-034-414-01	SHEET, RADIATION	
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING (LOADING)	

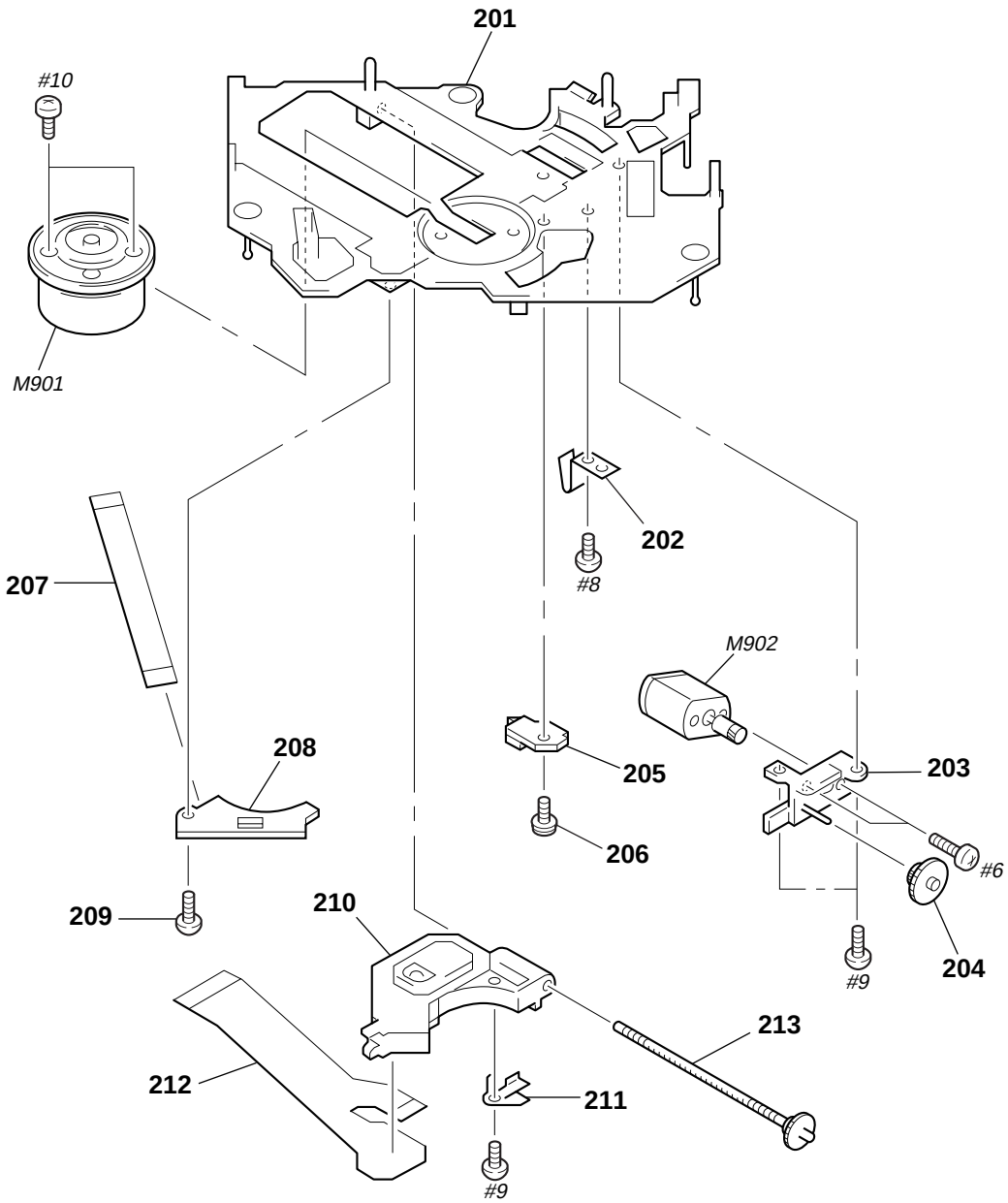
5-4. CD MECHANISM SECTION (2)
(MG-363S-121)



Ref. No.	Part No.	Description	Remark
151	3-931-893-01	ARM, CHUCKING	
152	3-931-897-01	DAMPER (T)	
153	3-931-879-02	LEVER (D)	
* 154	3-913-404-11	RETAINER (DISC)	
155	3-931-894-01	BRACKET (CP)	
156	3-931-895-01	SPRING (CH), TENSION	
157	3-931-898-01	SPRING (FL), COMPRESSION	
158	3-931-914-01	SPRING (ANGLE), TENSION	

Ref. No.	Part No.	Description	Remark
159	A-3277-802-C	CHASSIS (M) ASSY	
160	3-931-883-01	SPRING (TR), TENSION	
161	3-931-881-01	LEVER (LOCK)	
162	3-931-882-02	GEAR (MDL)	
163	3-007-537-11	WHEEL (U), WORM	
164	3-931-898-11	SPRING (FL), COMPRESSION	
165	3-018-272-01	WASHER	
166	3-014-727-01	WHEEL (LW), WORM	

5-5. CD MECHANISM SECTION (3)
(MG-363S-121)



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 201	X-3374-022-1	CHASSIS (OP) (O/S) ASSY	
202	3-931-829-01	SPRING (SL), PLATE	
203	X-3371-504-1	BASE (DRIVING) ASSY	
204	3-931-832-01	GEAR (SL MIDWAY)	
* 205	1-659-835-12	LIMIT SW BOARD	
206	3-338-737-01	SCREW (2X3), + PS	
207	1-659-880-11	MOTOR FLEXIBLE BOARD	
* 208	1-659-834-11	SUB BOARD	
209	3-909-607-01	SCREW	
⚠210	8-820-010-06	PICK-UP, OPTICAL KSS-521A/K1RP	
211	3-931-834-01	SPRING (FEED), PLATE	
212	1-659-881-11	PICK-UP FLEXIBLE BOARD	
213	A-3291-669-A	SHAFT (FEED) ASSY	
M901	X-3373-096-1	MOTOR ASSY (SPINDLE)	
M902	A-3301-107-A	MOTOR ASSY, SLED (SLED)	

DISC IN SW **KEY**

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example:
  uA.. : μA.. uPA.. : μPA..
  uPB.. : μPB.. uPC.. : μPC.. uPD.. : μPD..
- CAPACITORS
  uF : μF
- COILS
  uH : μH

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

- Abbreviation
  G : German model

Ref. No.	Part No.	Description			Remark
*	1-659-836-11	DISC IN SW BOARD			
		**********			
		< SWITCH >			
SW1	1-572-288-21	SWITCH, PUSH (DISC IN)			
SW2	1-572-288-21	SWITCH, PUSH (SELF)			
**********					
		KEY BOARD			
		**********			
	1-694-414-11	CONDUCTOR BOARD, CONNECTION			
*	3-022-326-03	PLATE (LCD), LIGHT GUIDE			
	3-022-327-01	PLATE (LCD), GROUND			
	3-327-119-01	SPACER (A)			
*	3-034-558-01	ILLUMINATOR (LCD)			
		< CAPACITOR >			
C900	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C901	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C902	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
		< CONNECTOR >			
CN900	1-778-183-11	PLUG, CONNECTOR 18P			
		< DIODE >			
D901	8-719-976-99	DIODE DTZ5.1B			
D903	8-719-976-99	DIODE DTZ5.1B			
		< ELECTRO LUMINESCENT LIGHT >			
EL900	1-517-766-11	LIGHT, ELECTRO LUMINESCENT			
		< IC >			
IC900	8-759-496-75	IC uPD16432BGC-018-9EU			
IC901	8-749-012-25	IC RS-170-TU			
		< JUMPER RESISTOR >			
JW900	1-216-295-00	SHORT	0		
		< LIQUID CRYSTAL DISPLAY >			
LCD900	1-803-504-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< DIODE >			
LED900	8-719-987-45	LED CL-155Y/PG-CD			
LED901	8-719-987-45	LED CL-155Y/PG-CD			
LED902	8-719-987-45	LED CL-155Y/PG-CD			
LED903	8-719-987-45	LED CL-155Y/PG-CD			
LED904	8-719-987-45	LED CL-155Y/PG-CD			
LED905	8-719-987-45	LED CL-155Y/PG-CD			
LED906	8-719-033-13	LED CL-170Y-CD-T			
LED907	8-719-033-14	LED CL-170PG-CD-T			
		< SWITCH >			
LSW900	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (OFF)			
LSW901	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (MODE)			
LSW902	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (SOURCE)			
LSW903	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (SOUND)			
LSW904	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (DSPL)			
LSW905	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (SHIFT)			
LSW906	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (1)			
LSW907	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (2)			
LSW908	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (3)			
LSW909	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (PTY/LIST)			
LSW910	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (AF/TA)			
LSW911	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (TIR)			
LSW912	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (10)			
LSW913	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (9)			
LSW914	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (8)			
LSW915	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (7)			
LSW916	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (6)			
LSW917	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (5)			
LSW918	1-762-620-21	SWITCH, KEY BOARD (WITH LED) (4)			
		< TRANSISTOR >			
Q900	8-729-904-66	TRANSISTOR DTD113EK			
Q901	8-729-904-66	TRANSISTOR DTD113EK			
Q902	8-729-027-23	TRANSISTOR DTA114EKA-T146			
Q903	8-729-027-23	TRANSISTOR DTA114EKA-T146			
		< RESISTOR >			
R901	1-216-045-00	METAL CHIP	680	5% 1/10W	
R902	1-216-045-00	METAL CHIP	680	5% 1/10W	
R903	1-216-045-00	METAL CHIP	680	5% 1/10W	
R904	1-216-049-11	RES,CHIP	1K	5% 1/10W	
R905	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	
R906	1-216-053-00	METAL CHIP	1.5K	5% 1/10W	
R907	1-216-057-00	METAL CHIP	2.2K	5% 1/10W	
R908	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R909	1-216-065-00	RES,CHIP	4.7K	5% 1/10W	

Ref. No.	Part No.	Description			Remark
R910	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R911	1-216-045-00	METAL CHIP	680	5%	1/10W
R912	1-216-045-00	METAL CHIP	680	5%	1/10W
R913	1-216-045-00	METAL CHIP	680	5%	1/10W
R914	1-216-049-11	RES,CHIP	1K	5%	1/10W
R915	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R916	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R917	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R918	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R919	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R920	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R931	1-216-037-00	METAL CHIP	330	5%	1/10W
R932	1-216-041-00	METAL CHIP	470	5%	1/10W
R933	1-216-037-00	METAL CHIP	330	5%	1/10W
R935	1-216-182-00	RES,CHIP	220	5%	1/8W
R936	1-216-182-00	RES,CHIP	220	5%	1/8W
R937	1-216-037-00	METAL CHIP	330	5%	1/10W
R938	1-216-037-00	METAL CHIP	330	5%	1/10W
R939	1-216-194-00	METAL CHIP	680	5%	1/8W
R941	1-216-025-00	RES,CHIP	100	5%	1/10W
R942	1-216-041-00	METAL CHIP	470	5%	1/10W
R943	1-216-025-00	RES,CHIP	100	5%	1/10W
R944	1-216-041-00	METAL CHIP	470	5%	1/10W
R945	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R946	1-216-089-00	RES,CHIP	47K	5%	1/10W
R947	1-216-089-00	RES,CHIP	47K	5%	1/10W
R948	1-216-049-11	RES,CHIP	1K	5%	1/10W
R949	1-216-049-11	RES,CHIP	1K	5%	1/10W
R950	1-216-049-11	RES,CHIP	1K	5%	1/10W
R951	1-216-049-11	RES,CHIP	1K	5%	1/10W
R952	1-216-093-00	RES,CHIP	68K	5%	1/10W
R953	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R954	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R955	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R956	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R957	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R958	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
		< ROTARY ENCODER >			
RE900	1-475-014-11	ENCODER, ROTARY			
		< SWITCH >			
S900	1-771-290-11	SWITCH, SLIDE (SEEK/AMS)			
**********					
*	1-659-835-12	LIMIT SW BOARD			
		**********			
		< SWITCH >			
SW3	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)			
**********					

Ref. No.	Part No.	Description			Remark
*	1-659-837-11	LOAD SW BOARD			
		**********			
		< SWITCH >			
SW4	1-572-288-21	SWITCH, PUSH (DOWN)			
**********					
*	A-3294-672-A	MAIN BOARD, COMPLETE (AEP,UK)			
*	A-3294-675-A	MAIN BOARD, COMPLETE (G)			
		**********			
*	3-014-819-01	HEAT SINK (REG2)			
*	3-022-317-11	BRACKET (AMP)			
*	3-022-336-01	HEAT SINK			
	7-685-794-09	SCREW +PTT 2.6X10 (S)			
		< BUZZER >			
BZ501	1-504-920-11	BUZZER			
		< CAPACITOR >			
C10	1-104-665-11	ELECT	100uF	20%	10V
C11	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C12	1-104-665-11	ELECT	100uF	20%	10V
C13	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C14	1-104-665-11	ELECT	100uF	20%	10V
C15	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C16	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C17	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C18	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C19	1-124-234-00	ELECT	22uF	20%	16V
C20	1-104-953-11	ELECT	47uF	20%	16V
C21	1-136-155-00	FILM	0.015uF	5%	50V
C22	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C23	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C24	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C25	1-124-234-00	ELECT	22uF	20%	16V
C26	1-124-234-00	ELECT	22uF	20%	16V
C27	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C28	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C29	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C30	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C31	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C32	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C33	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C34	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C35	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C37	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C38	1-163-234-11	CERAMIC CHIP	20PF	5%	50V
C40	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C41	1-162-587-11	CERAMIC CHIP	0.039uF	10%	25V
C42	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C43	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C44	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C45	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V

MAIN

Ref. No.	Part No.	Description			Remark
C46	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C47	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C48	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C49	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C50	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C51	1-163-137-00	CERAMIC CHIP	680PF	5%	50V (AEP,UK)
C51	1-163-263-11	CERAMIC CHIP	330PF	5%	50V (G)
C52	1-163-137-00	CERAMIC CHIP	680PF	5%	50V (AEP,UK)
C52	1-163-263-11	CERAMIC CHIP	330PF	5%	50V (G)
C61	1-137-366-11	FILM	0.0022uF	5%	50V
C91	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C92	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C102	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C103	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C104	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C105	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C109	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C110	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C111	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C112	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C113	1-163-263-11	CERAMIC CHIP	330PF	5%	50V
C114	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C115	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C116	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C117	1-126-157-11	ELECT	10uF	20%	16V
C118	1-126-157-11	ELECT	10uF	20%	16V
C119	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C120	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C121	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C122	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C201	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C202	1-126-157-11	ELECT	10uF	20%	16V
C203	1-126-157-11	ELECT	10uF	20%	16V
C204	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C205	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C206	1-124-257-00	ELECT	2.2uF	20%	50V
C207	1-124-257-00	ELECT	2.2uF	20%	50V
C208	1-124-257-00	ELECT	2.2uF	20%	50V
C209	1-124-257-00	ELECT	2.2uF	20%	50V
C210	1-124-257-00	ELECT	2.2uF	20%	50V
C211	1-124-257-00	ELECT	2.2uF	20%	50V
C212	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C213	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C214	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C215	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C216	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C217	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C218	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C219	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V

Ref. No.	Part No.	Description			Remark
C220	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C221	1-126-157-11	ELECT	10uF	20%	16V
C222	1-126-157-11	ELECT	10uF	20%	16V
C223	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C224	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C225	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C226	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C227	1-126-157-11	ELECT	10uF	20%	16V
C228	1-126-157-11	ELECT	10uF	20%	16V
C229	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C230	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C231	1-124-234-00	ELECT	22uF	20%	16V
C232	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C233	1-126-157-11	ELECT	10uF	20%	16V
C234	1-126-157-11	ELECT	10uF	20%	16V
C235	1-104-955-11	ELECT	100uF	20%	10V
C236	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C237	1-124-234-00	ELECT	22uF	20%	16V
C238	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C239	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C240	1-124-234-00	ELECT	22uF	20%	16V
C241	1-124-234-00	ELECT	22uF	20%	16V
C242	1-104-953-11	ELECT	47uF	20%	16V
C243	1-124-234-00	ELECT	22uF	20%	16V
C244	1-124-234-00	ELECT	22uF	20%	16V
C245	1-124-234-00	ELECT	22uF	20%	16V
C246	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C247	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C248	1-124-234-00	ELECT	22uF	20%	16V
C249	1-104-953-11	ELECT	47uF	20%	16V
C250	1-104-953-11	ELECT	47uF	20%	16V
C251	1-115-175-11	ELECT	100uF	20%	16V
C252	1-115-175-11	ELECT	100uF	20%	16V
C253	1-126-157-11	ELECT	10uF	20%	16V
C254	1-126-157-11	ELECT	10uF	20%	16V
C255	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C256	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C257	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C258	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C259	1-115-175-11	ELECT	100uF	20%	16V
C260	1-115-175-11	ELECT	100uF	20%	16V
C261	1-115-175-11	ELECT	100uF	20%	16V
C262	1-115-175-11	ELECT	100uF	20%	16V
C263	1-126-157-11	ELECT	10uF	20%	16V
C264	1-126-157-11	ELECT	10uF	20%	16V
C265	1-126-157-11	ELECT	10uF	20%	16V
C266	1-126-157-11	ELECT	10uF	20%	16V
C267	1-125-827-11	CERAMIC CHIP	1uF	10%	25V
C268	1-104-664-11	ELECT	47uF	20%	25V
C269	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C270	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C271	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C272	1-107-682-11	CERAMIC CHIP	1uF	10%	16V

Ref. No.	Part No.	Description			Remark
C273	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C274	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C275	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C276	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C277	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C278	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C291	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C292	1-104-953-11	ELECT	47uF	20%	16V
C297	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C299	1-115-469-31	ELECT	4700uF		16V
C301	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C304	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C306	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C307	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C308	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C309	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C310	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C401	1-115-651-11	ELECT	100uF	20%	16V
C402	1-124-234-00	ELECT	22uF	20%	16V
C403	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C404	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C406	1-115-651-11	ELECT	100uF	20%	16V
C407	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C408	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C409	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C410	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C411	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C412	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C413	1-126-295-11	ELECT	10uF	20%	35V
C414	1-126-295-11	ELECT	10uF	20%	35V
C415	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C416	1-124-234-00	ELECT	22uF	20%	16V
C417	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C418	1-124-257-00	ELECT	2.2uF	20%	50V
C419	1-124-257-00	ELECT	2.2uF	20%	50V
C420	1-115-651-11	ELECT	100uF	20%	16V
C421	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C422	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C423	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V
C424	1-163-197-00	CERAMIC CHIP	470PF	5%	50V
C425	1-163-197-00	CERAMIC CHIP	470PF	5%	50V
C426	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C427	1-126-295-11	ELECT	10uF	20%	35V
C428	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C429	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C430	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C432	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C433	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C501	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C502	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C503	1-107-686-11	TANTAL. CHIP	4.7uF	20%	16V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C505	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C506	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C507	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C508	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C509	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C510	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C511	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C512	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C513	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C514	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C601	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C605	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C606	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C610	1-125-701-11	DOUBLE LAYERS	0.047F		5.5V
C611	1-104-665-11	ELECT	100uF	20%	10V
C618	1-124-234-00	ELECT	22uF	20%	16V
C621	1-124-234-00	ELECT	22uF	20%	16V
C622	1-124-234-00	ELECT	22uF	20%	16V
C627	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C628	1-124-234-00	ELECT	22uF	20%	16V
C629	1-124-234-00	ELECT	22uF	20%	16V
C632	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C634	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C635	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C636	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C637	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C638	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C639	1-126-157-11	ELECT	10uF	20%	16V
C641	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C642	1-126-934-11	ELECT	220uF	20%	16V
C643	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C801	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C812	1-162-286-21	CERAMIC	220PF	10%	50V
C813	1-162-294-31	CERAMIC	0.001uF	10%	50V

< CONNECTOR >

Ref. No.	Part No.	Description
* CN10	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P
CN401	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P
CN501	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)
CN601	1-774-701-11	PIN, CONNECTOR 16P
* CN602	1-566-054-11	PIN, CONNECTOR 2P
CN801	1-770-411-11	CONNECTOR, BOARD TO BOARD 20P

< JACK >

Ref. No.	Part No.	Description
CN201	1-774-699-12	JACK, PIN 4P (LINE OUT/IN)
CN202	1-774-699-12	JACK, PIN 4P (SUB OUT,BUS AUDIO IN)

< DISCHARGE GAP >

Ref. No.	Part No.	Description
CP10	1-519-504-11	GAP, DISCHARGE

< DIODE >

Ref. No.	Part No.	Description
D10	8-719-422-49	DIODE MA8056-L

MAIN

Ref. No.	Part No.	Description	Remark
D11	8-719-422-97	DIODE MA8091-M	
D12	8-719-040-04	DIODE MA721WK-(TX)	
D13	8-719-421-24	DIODE MA8039-H	
D201	8-719-914-43	DIODE DAN202K	
D202	8-719-421-24	DIODE MA8039-H	
D203	8-719-988-61	DIODE 1SS355TE-17	
D204	8-719-053-18	DIODE 1SR154-400TE-25	
D205	8-719-053-18	DIODE 1SR154-400TE-25	
D206	8-719-053-18	DIODE 1SR154-400TE-25	
D207	8-719-053-18	DIODE 1SR154-400TE-25	
D208	8-719-053-18	DIODE 1SR154-400TE-25	
D209	8-719-053-18	DIODE 1SR154-400TE-25	
D210	8-719-053-18	DIODE 1SR154-400TE-25	
D211	8-719-053-18	DIODE 1SR154-400TE-25	
D212	8-719-421-24	DIODE MA8039-H	
D401	8-719-977-03	DIODE DTZ5.6B	
D402	8-719-422-94	DIODE MA8091-L	
D501	8-719-914-44	DIODE DAP202K	
D505	8-719-988-61	DIODE 1SS355TE-17	
D506	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D507	8-719-017-62	DIODE MA8068-L-TX	
D508	8-719-056-93	DIODE UDZ-TE-17-18B	
D509	8-719-978-69	DIODE DTZ-TT11-16B	
D510	8-719-056-93	DIODE UDZ-TE-17-18B	
D511	8-719-988-61	DIODE 1SS355TE-17	
D602	8-719-056-84	DIODE UDZ-TE-17-7.5B	
D603	8-719-914-43	DIODE DAN202K	
D605	8-719-988-61	DIODE 1SS355TE-17	
D606	8-719-988-61	DIODE 1SS355TE-17	
D607	8-719-056-84	DIODE UDZ-TE-17-7.5B	
D608	8-719-067-56	DIODE MA112-TX	
D609	8-719-914-43	DIODE DAN202K	
D610	8-719-056-88	DIODE UDZ-TE-17-11B	
D621	8-719-053-18	DIODE 1SR154-400TE-25	
D622	8-719-053-18	DIODE 1SR154-400TE-25	
D637	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D640	8-719-049-38	DIODE 1N5404TU	
D642	8-719-056-88	DIODE UDZ-TE-17-11B	
D643	8-719-976-96	DIODE DTZ4.7C	
D644	8-719-422-97	DIODE MA8091-M	
D801	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D802	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D803	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D804	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D805	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D806	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D807	8-719-158-49	DIODE RD12SB2	
D808	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D809	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D810	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D811	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D812	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D813	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D814	8-719-988-61	DIODE 1SS355TE-17	

Ref. No.	Part No.	Description	Remark
D815	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D816	8-719-056-83	DIODE UDZ-TE-17-6.8B	
D818	8-719-988-61	DIODE 1SS355TE-17	
D819	8-719-914-44	DIODE DAP202K	
D820	8-719-056-83	DIODE UDZ-TE-17-6.8B	
		< IC >	
IC10	8-759-448-85	IC BU2624FV-E2	
IC11	8-759-711-82	IC NJM4580E	
IC12	8-759-184-64	IC TC4W66FU	
IC101	8-759-492-59	IC SAA6588T-118	
IC102	8-759-448-87	IC MSM6684JSDR1	
IC103	8-759-374-66	IC MSM6688GS-2K	
IC104	8-759-366-35	IC TC4W66F(TE12R)	
IC201	8-759-387-26	IC BU4052BCFV-E2	
IC202	8-752-078-67	IC CXA1946BQ-T6	
IC203	8-759-711-82	IC NJM4580E	
IC204	8-752-091-06	IC CXA1846BN-T4	
IC205	8-759-444-50	IC TDA8574(T)	
IC206	8-759-711-82	IC NJM4580E	
IC207	8-759-444-50	IC TDA8574(T)	
IC208	8-759-444-50	IC TDA8574(T)	
IC211	8-759-486-44	IC TDA7386	
IC401	8-759-531-50	IC PCM1716E-BT2	
IC403	8-759-700-94	IC NJM5532M	
IC404	8-759-711-58	IC NJM78L05UA	
IC501	8-759-579-92	IC MB90574PFV-G-183-BND	
IC505	8-759-449-89	IC BA8270F-E2	
IC601	8-759-363-81	IC XC61AN4002PR	
IC602	8-759-347-50	IC BA3918-V3	
IC606	8-759-495-75	IC NJM317F	
		< JACK >	
J801	1-566-822-41	JACK (REMOTE IN)	
		< JUMPER RESISTOR >	
JC205	1-216-295-00	SHORT 0	
JC206	1-216-295-00	SHORT 0	
JC207	1-216-295-00	SHORT 0	
JC208	1-216-295-00	SHORT 0	
JC209	1-216-295-00	SHORT 0	
JC210	1-216-295-00	SHORT 0	
JC211	1-216-295-00	SHORT 0	
JC212	1-216-295-00	SHORT 0	
JC213	1-216-295-00	SHORT 0	
JC214	1-216-295-00	SHORT 0	
JC513	1-216-296-00	SHORT 0	
JC601	1-216-295-00	SHORT 0	
		< COIL >	
L10	1-414-398-11	INDUCTOR 10uH	
L11	1-414-398-11	INDUCTOR 10uH	

Ref. No.	Part No.	Description	Remark
L101	1-414-398-11	INDUCTOR 10uH	
L102	1-414-235-22	INDUCTOR, FERRITE BEAD	
L103	1-414-398-11	INDUCTOR 10uH	
L401	1-414-598-11	INDUCTOR, FERRITE BEAD	
L402	1-414-398-11	INDUCTOR 10uH	
L403	1-414-598-11	INDUCTOR, FERRITE BEAD	
L404	1-414-235-22	INDUCTOR, FERRITE BEAD	
L405	1-414-598-11	INDUCTOR, FERRITE BEAD	
L501	1-414-398-11	INDUCTOR 10uH	
L601	1-411-670-31	INDUCTOR 400uH	
L602	1-412-062-11	INDUCTOR CHIP 47uH	
		< EARTH TERMINAL >	
* LUG1	1-537-738-21	TERMINAL, EARTH	
		< TRANSISTOR >	
Q10	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q11	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q12	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q13	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q14	8-729-921-25	TRANSISTOR FMC2	
Q15	8-729-900-53	TRANSISTOR DTC114EK	
Q16	8-729-920-21	TRANSISTOR DTC314TKH04	
Q17	8-729-920-21	TRANSISTOR DTC314TKH04	
Q18	8-729-920-21	TRANSISTOR DTC314TKH04	
Q19	8-729-921-25	TRANSISTOR FMC2	
Q51	8-729-021-94	FET 2SK1657-T1B	
Q52	8-729-900-53	TRANSISTOR DTC114EK	
Q101	8-729-921-25	TRANSISTOR FMC2	
Q102	8-729-028-66	TRANSISTOR DTC115EKA-T146	
Q103	8-729-900-53	TRANSISTOR DTC114EK	
Q201	8-729-420-74	TRANSISTOR 2SD1328-RST	
Q202	8-729-420-74	TRANSISTOR 2SD1328-RST	
Q203	8-729-920-28	TRANSISTOR FMG9	
Q205	8-729-028-66	TRANSISTOR DTC115EKA-T146	
Q206	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q207	8-729-420-74	TRANSISTOR 2SD1328-RST	
Q208	8-729-420-74	TRANSISTOR 2SD1328-RST	
Q209	8-729-420-74	TRANSISTOR 2SD1328-RST	
Q210	8-729-420-74	TRANSISTOR 2SD1328-RST	
Q211	8-729-021-94	FET 2SK1657-T1B	
Q212	8-729-920-21	TRANSISTOR DTC314TKH04	
Q213	8-729-920-21	TRANSISTOR DTC314TKH04	
Q214	8-729-920-21	TRANSISTOR DTC314TKH04	
Q215	8-729-920-21	TRANSISTOR DTC314TKH04	
Q401	8-729-922-65	TRANSISTOR 2SD1760F5-PQR	
Q402	8-729-019-00	TRANSISTOR 2SD2394-G	
Q403	8-729-921-25	TRANSISTOR FMC2	
Q404	8-729-904-48	TRANSISTOR DTB113EK	
Q405	8-729-900-53	TRANSISTOR DTC114EK	
Q501	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q502	8-729-900-53	TRANSISTOR DTC114EK	
Q503	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q504	8-729-900-53	TRANSISTOR DTC114EK	
Q508	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q601	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q602	8-729-931-41	TRANSISTOR FMC5	
Q604	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q608	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q610	8-729-921-25	TRANSISTOR FMC2	
Q611	8-729-903-46	TRANSISTOR 2SB1132-P	
Q612	8-729-900-53	TRANSISTOR DTC114EK	
Q617	8-729-922-65	TRANSISTOR 2SD1760F5-PQR	
Q619	8-729-921-25	TRANSISTOR FMC2	
Q621	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q622	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q623	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q624	8-729-921-25	TRANSISTOR FMC2	
Q625	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q626	8-729-900-53	TRANSISTOR DTC114EK	
Q627	8-729-903-46	TRANSISTOR 2SB1132-P	
Q628	8-729-900-53	TRANSISTOR DTC114EK	
Q629	8-729-922-65	TRANSISTOR 2SD1760F5-PQR	
Q630	8-729-900-53	TRANSISTOR DTC114EK	
Q631	8-729-903-46	TRANSISTOR 2SB1132-P	
Q801	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q802	8-729-027-23	TRANSISTOR DTA114EKA-T146	
		< RESISTOR >	
R10	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R11	1-216-097-00	RES,CHIP 100K 5% 1/10W	
R12	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R13	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R14	1-216-037-00	METAL CHIP 330 5% 1/10W	
R15	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R16	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R17	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R18	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R19	1-216-065-00	RES,CHIP 4.7K 5% 1/10W	
R20	1-216-049-11	RES,CHIP 1K 5% 1/10W	
R21	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R22	1-216-097-00	RES,CHIP 100K 5% 1/10W	
R23	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R24	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R25	1-216-065-00	RES,CHIP 4.7K 5% 1/10W	
R26	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R27	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R28	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R29	1-216-089-00	RES,CHIP 47K 5% 1/10W	
R30	1-216-089-00	RES,CHIP 47K 5% 1/10W	
R31	1-216-073-00	METAL CHIP 10K 5% 1/10W (AEP,UK)	
R31	1-216-081-00	METAL CHIP 22K 5% 1/10W (G)	
R32	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R33	1-216-073-00	METAL CHIP 10K 5% 1/10W	

MAIN

Ref. No.	Part No.	Description			Remark
R34	1-216-073-00	METAL CHIP	10K	5%	1/10W (AEP,UK)
R34	1-216-081-00	METAL CHIP	22K	5%	1/10W (G)
R36	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R37	1-216-049-11	RES,CHIP	1K	5%	1/10W
R51	1-216-049-11	RES,CHIP	1K	5%	1/10W
R52	1-216-089-00	RES,CHIP	47K	5%	1/10W
R53	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R54	1-216-089-00	RES,CHIP	47K	5%	1/10W
R101	1-216-113-00	METAL CHIP	470K	5%	1/10W
R102	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R103	1-216-041-00	METAL CHIP	470	5%	1/10W
R104	1-216-035-00	METAL CHIP	270	5%	1/10W
R105	1-216-035-00	METAL CHIP	270	5%	1/10W
R107	1-216-097-00	RES,CHIP	100K	5%	1/10W
R108	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R109	1-216-001-00	METAL CHIP	10	5%	1/10W
R110	1-216-097-00	RES,CHIP	100K	5%	1/10W
R111	1-216-097-00	RES,CHIP	100K	5%	1/10W
R112	1-216-097-00	RES,CHIP	100K	5%	1/10W
R113	1-216-085-00	METAL CHIP	33K	5%	1/10W
R114	1-216-097-00	RES,CHIP	100K	5%	1/10W
R115	1-216-025-00	RES,CHIP	100	5%	1/10W
R117	1-216-049-11	RES,CHIP	1K	5%	1/10W
R118	1-216-089-00	RES,CHIP	47K	5%	1/10W
R119	1-216-097-00	RES,CHIP	100K	5%	1/10W
R120	1-216-073-00	METAL CHIP	10K	5%	1/10W
R121	1-216-073-00	METAL CHIP	10K	5%	1/10W
R122	1-216-089-00	RES,CHIP	47K	5%	1/10W
R123	1-216-845-11	METAL CHIP	100K	5%	1/16W
R201	1-216-049-11	RES,CHIP	1K	5%	1/10W
R202	1-216-049-11	RES,CHIP	1K	5%	1/10W
R203	1-216-073-00	METAL CHIP	10K	5%	1/10W
R204	1-216-073-00	METAL CHIP	10K	5%	1/10W
R205	1-216-089-00	RES,CHIP	47K	5%	1/10W
R206	1-216-089-00	RES,CHIP	47K	5%	1/10W
R208	1-216-097-00	RES,CHIP	100K	5%	1/10W
R209	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R210	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R211	1-216-097-00	RES,CHIP	100K	5%	1/10W
R212	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R213	1-216-073-00	METAL CHIP	10K	5%	1/10W
R214	1-216-073-00	METAL CHIP	10K	5%	1/10W
R215	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R220	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R221	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R223	1-216-073-00	METAL CHIP	10K	5%	1/10W
R224	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R225	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R226	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R227	1-216-073-00	METAL CHIP	10K	5%	1/10W
R228	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R229	1-216-097-00	RES,CHIP	100K	5%	1/10W
R230	1-216-097-00	RES,CHIP	100K	5%	1/10W
R233	1-216-089-00	RES,CHIP	47K	5%	1/10W
R234	1-216-295-00	SHORT	0		
R235	1-216-295-00	SHORT	0		
R236	1-216-089-00	RES,CHIP	47K	5%	1/10W
R237	1-216-049-11	RES,CHIP	1K	5%	1/10W
R238	1-216-049-11	RES,CHIP	1K	5%	1/10W
R239	1-216-049-11	RES,CHIP	1K	5%	1/10W
R240	1-216-049-11	RES,CHIP	1K	5%	1/10W
R241	1-216-214-00	RES,CHIP	4.7K	5%	1/8W
R242	1-216-214-00	RES,CHIP	4.7K	5%	1/8W
R243	1-216-086-00	RES,CHIP	36K	5%	1/10W
R244	1-216-082-00	RES,CHIP	24K	5%	1/10W
R245	1-216-082-00	RES,CHIP	24K	5%	1/10W
R246	1-216-086-00	RES,CHIP	36K	5%	1/10W
R247	1-216-033-00	METAL CHIP	220	5%	1/10W
R248	1-216-033-00	METAL CHIP	220	5%	1/10W
R249	1-216-081-00	METAL CHIP	22K	5%	1/10W
R250	1-216-081-00	METAL CHIP	22K	5%	1/10W
R251	1-216-082-00	RES,CHIP	24K	5%	1/10W
R252	1-216-082-00	RES,CHIP	24K	5%	1/10W
R253	1-216-082-00	RES,CHIP	24K	5%	1/10W
R254	1-216-082-00	RES,CHIP	24K	5%	1/10W
R255	1-216-049-11	RES,CHIP	1K	5%	1/10W
R256	1-216-049-11	RES,CHIP	1K	5%	1/10W
R257	1-216-086-00	RES,CHIP	36K	5%	1/10W
R258	1-216-086-00	RES,CHIP	36K	5%	1/10W
R261	1-216-086-00	RES,CHIP	36K	5%	1/10W
R262	1-216-086-00	RES,CHIP	36K	5%	1/10W
R264	1-216-033-00	METAL CHIP	220	5%	1/10W
R265	1-216-033-00	METAL CHIP	220	5%	1/10W
R266	1-216-033-00	METAL CHIP	220	5%	1/10W
R267	1-216-033-00	METAL CHIP	220	5%	1/10W
R268	1-216-085-00	METAL CHIP	33K	5%	1/10W
R269	1-216-049-11	RES,CHIP	1K	5%	1/10W
R270	1-216-049-11	RES,CHIP	1K	5%	1/10W
R271	1-216-049-11	RES,CHIP	1K	5%	1/10W
R272	1-216-049-11	RES,CHIP	1K	5%	1/10W
R273	1-216-017-00	RES,CHIP	47	5%	1/10W
R274	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R275	1-216-081-00	METAL CHIP	22K	5%	1/10W
R276	1-216-081-00	METAL CHIP	22K	5%	1/10W
R277	1-216-081-00	METAL CHIP	22K	5%	1/10W
R278	1-216-081-00	METAL CHIP	22K	5%	1/10W
R280	1-216-081-00	METAL CHIP	22K	5%	1/10W
R281	1-216-073-00	METAL CHIP	10K	5%	1/10W
R282	1-216-033-00	METAL CHIP	220	5%	1/10W
R283	1-216-033-00	METAL CHIP	220	5%	1/10W
R284	1-216-033-00	METAL CHIP	220	5%	1/10W
R285	1-216-033-00	METAL CHIP	220	5%	1/10W
R286	1-216-081-00	METAL CHIP	22K	5%	1/10W
R287	1-216-081-00	METAL CHIP	22K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R288	1-216-081-00	METAL CHIP	22K	5%	1/10W
R289	1-216-081-00	METAL CHIP	22K	5%	1/10W
R333	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R336	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R401	1-216-025-00	RES,CHIP	100	5%	1/10W
R402	1-216-025-00	RES,CHIP	100	5%	1/10W
R403	1-216-025-00	RES,CHIP	100	5%	1/10W
R404	1-216-037-00	METAL CHIP	330	5%	1/10W
R405	1-216-033-00	METAL CHIP	220	5%	1/10W
R406	1-216-037-00	METAL CHIP	330	5%	1/10W
R407	1-216-049-11	RES,CHIP	1K	5%	1/10W
R409	1-216-049-11	RES,CHIP	1K	5%	1/10W
R410	1-216-238-00	RES,CHIP	47K	5%	1/8W
R411	1-216-238-00	RES,CHIP	47K	5%	1/8W
R412	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R413	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R414	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R415	1-216-210-00	RES,CHIP	3.3K	2%	1/8W
R416	1-216-222-00	RES,CHIP	10K	5%	1/8W
R417	1-216-222-00	RES,CHIP	10K	5%	1/8W
R501	1-216-821-11	METAL CHIP	1K	5%	1/16W
R504	1-216-295-00	SHORT	0		
R505	1-216-295-00	SHORT	0		
R508	1-216-295-00	SHORT	0		
R511	1-216-097-00	RES,CHIP	100K	5%	1/10W
R512	1-216-097-00	RES,CHIP	100K	5%	1/10W
R515	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R516	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R520	1-216-097-00	RES,CHIP	100K	5%	1/10W
R524	1-216-017-00	RES,CHIP	47	5%	1/10W
R526	1-216-037-00	METAL CHIP	330	5%	1/10W
R527	1-216-089-00	RES,CHIP	47K	5%	1/10W
R528	1-216-097-00	RES,CHIP	100K	5%	1/10W
R529	1-216-049-11	RES,CHIP	1K	5%	1/10W
R531	1-216-073-00	METAL CHIP	10K	5%	1/10W
R532	1-216-025-00	RES,CHIP	100	5%	1/10W
R533	1-216-025-00	RES,CHIP	100	5%	1/10W
R534	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R535	1-216-089-00	RES,CHIP	47K	5%	1/10W
R605	1-216-085-00	METAL CHIP	33K	5%	1/10W
R606	1-216-089-00	RES,CHIP	47K	5%	1/10W
R608	1-216-089-00	RES,CHIP	47K	5%	1/10W
R612	1-216-085-00	METAL CHIP	33K	5%	1/10W
R613	1-216-089-00	RES,CHIP	47K	5%	1/10W
R614	1-216-089-00	RES,CHIP	47K	5%	1/10W
R616	1-216-097-00	RES,CHIP	100K	5%	1/10W
R619	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R621	1-216-097-00	RES,CHIP	100K	5%	1/10W
R624	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R626	1-216-073-00	METAL CHIP	10K	5%	1/10W
R631	1-216-041-00	METAL CHIP	470	5%	1/10W
R632	1-216-097-00	RES,CHIP	100K	5%	1/10W
R633	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R636	1-216-073-00	METAL CHIP	10K	5%	1/10W
R637	1-216-073-00	METAL CHIP	10K	5%	1/10W
R638	1-216-073-00	METAL CHIP	10K	5%	1/10W
R639	1-216-085-00	METAL CHIP	33K	5%	1/10W
R655	1-216-206-00	RES,CHIP	2.2K	5%	1/8W
R656	1-216-206-00	RES,CHIP	2.2K	5%	1/8W
R657	1-216-049-11	RES,CHIP	1K	5%	1/10W
R662	1-216-041-00	METAL CHIP	470	5%	1/10W
R663	1-216-073-00	METAL CHIP	10K	5%	1/10W
R664	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R665	1-216-198-00	RES,CHIP	1K	5%	1/8W
R666	1-216-198-00	RES,CHIP	1K	5%	1/8W
R668	1-216-164-00	RES,CHIP	39	5%	1/8W
R669	1-216-164-00	RES,CHIP	39	5%	1/8W
R670	1-216-073-00	METAL CHIP	10K	5%	1/10W
R671	1-216-609-11	METAL CHIP	18	0.5%	1/10W
R672	1-216-049-11	RES,CHIP	1K	5%	1/10W
R801	1-216-097-00	RES,CHIP	100K	5%	1/10W
R802	1-216-097-00	RES,CHIP	100K	5%	1/10W
R803	1-216-025-00	RES,CHIP	100	5%	1/10W
R804	1-216-025-00	RES,CHIP	100	5%	1/10W
R805	1-216-073-00	METAL CHIP	10K	5%	1/10W
R806	1-208-462-41	RES,CHIP	10K	2%	1/10W
R807	1-216-049-11	RES,CHIP	1K	5%	1/10W
R808	1-216-025-00	RES,CHIP	100	5%	1/10W
R809	1-216-025-00	RES,CHIP	100	5%	1/10W
R810	1-216-049-11	RES,CHIP	1K	5%	1/10W
R811	1-216-049-11	RES,CHIP	1K	5%	1/10W
R812	1-216-049-11	RES,CHIP	1K	5%	1/10W
R813	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R814	1-216-049-11	RES,CHIP	1K	5%	1/10W
R815	1-216-049-11	RES,CHIP	1K	5%	1/10W
R816	1-216-025-00	RES,CHIP	100	5%	1/10W
R817	1-216-049-11	RES,CHIP	1K	5%	1/10W
R818	1-216-049-11	RES,CHIP	1K	5%	1/10W
R819	1-208-462-41	RES,CHIP	10K	2%	1/10W
R820	1-208-462-41	RES,CHIP	10K	2%	1/10W
R822	1-216-049-11	RES,CHIP	1K	5%	1/10W

< NETWORK RESISTOR >

RB101	1-233-810-21	RES, CHIP NETWORK	100K	(3216)	
RB501	1-233-412-11	RES, CHIP NETWORK	1.0K	(3216)	
RB502	1-233-810-21	RES, CHIP NETWORK	100K	(3216)	
RB503	1-233-810-21	RES, CHIP NETWORK	100K	(3216)	
RB504	1-233-810-21	RES, CHIP NETWORK	100K	(3216)	

< VARIABLE RESISTOR >

RV10	1-238-718-11	RES, ADJ, METAL GLAZE	470K		

< SWITCH >

SW502	1-571-478-11	SWITCH, SLIDE (POWER SELECT)			
SW802	1-762-108-31	SWITCH, PUSH (1 KEY) (NOSE DET)			

MAIN **RELAY** **SERVO**

Ref. No.	Part No.	Description			Remark
		< THERMISTOR (POSITIVE) >			
TH501	1-801-792-21	THERMISTOR, POSITIVE			
		< TUNER >			
TU10	A-3282-045-A	TUNER UNIT (TUX-012(E))			
		< VIBRATOR >			
X10	1-577-126-51	VIBRATOR, CRYSTAL (7.2MHz)			
X101	1-760-556-11	VIBRATOR, CRYSTAL (4.332MHz)			
X102	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)			
X401	1-579-280-31	VIBRATOR, CRYSTAL (16.9344MHz)			
X501	1-767-833-21	VIBRATOR, CERAMIC (3.68MHz)			
X502	1-579-886-21	VIBRATOR, CRYSTAL (32.768kHz)			
**********					
*	1-668-088-21	RELAY BOARD			
		**********			
		< CAPACITOR >			
C803	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C804	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C805	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C806	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C807	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C810	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C811	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN802	1-779-170-11	SOCKET, CONNECTOR 20P			
CN803	1-779-169-11	SOCKET, CONNECTOR 18P			
CN804	1-778-330-21	PIN, CONNECTOR (PC BOARD) 2P			
		< SPARK GAP >			
CP801	1-517-729-31	GAP, SPARK			
		< DIODE >			
LED801	8-719-051-01	LED CL-170HR-CD-T (TIR)			
LED802	8-719-033-14	LED CL-170PG-CD-T (CD WINDOW)			
LED803	8-719-033-14	LED CL-170PG-CD-T (CD WINDOW)			
LED804	8-719-038-07	LED CL-190PG-CD-T (⏏)			
		< RESISTOR >			
R821	1-216-033-00	METAL CHIP	220	5%	1/10W
R831	1-216-258-00	RES,CHIP	330K	5%	1/8W
		< SWITCH >			
SW801	1-692-135-21	SWITCH, KEY BOARD (RESET)			
SW803	1-771-027-21	SWITCH, KEY BOARD (WITH LED) (⏏)			
**********					

Ref. No.	Part No.	Description			Remark
*	A-3313-381-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C2	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C3	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C4	1-110-456-11	ELECT CHIP	47uF	20%	16V
C101	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C102	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C105	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C106	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C107	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-115-581-11	TANTAL. CHIP	100uF	20%	16V
C110	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C111	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C112	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C113	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C203	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C204	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C206	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C207	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C208	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C209	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C301	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C303	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C304	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C305	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C306	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C307	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C308	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C309	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C310	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C311	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C312	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C313	1-163-259-11	CERAMIC CHIP	220PF	5%	50V
C501	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C502	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C503	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C504	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C505	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C506	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C507	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C508	1-104-760-11	CERAMIC CHIP	0.047uF	10%	50V
C509	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C510	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C511	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C513	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C514	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C527	1-113-642-11	TANTAL. CHIP	47uF	20%	10V
C551	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C601	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

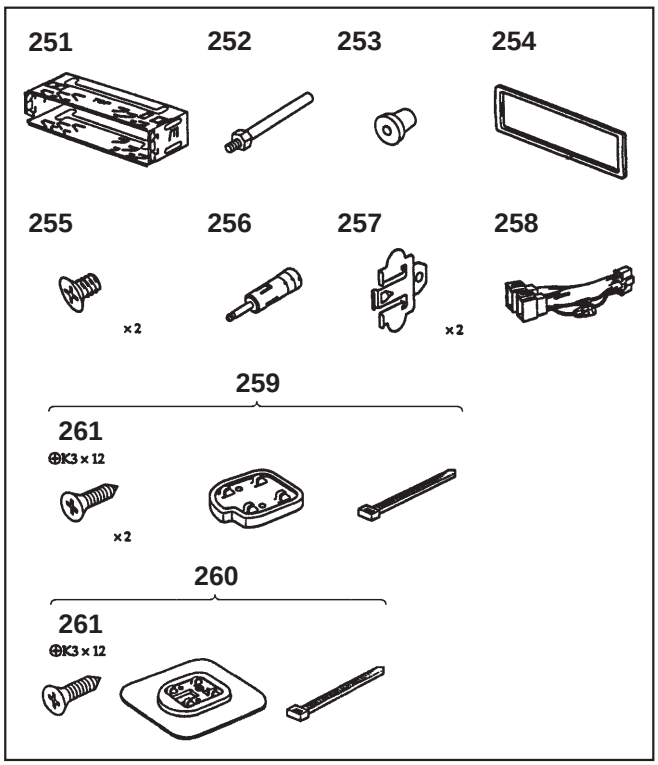
Ref. No.	Part No.	Description			Remark
C603	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C605	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< CONNECTOR >			
CN1	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P			
CN2	1-766-491-11	CONNECTOR, FPC 17P			
CN4	1-770-347-21	CONNECTOR, FPC 6P			
* CN5	1-569-775-21	PIN, CONNECTOR (SMD) 5P			
		< IC >			
IC1	8-752-069-29	IC CXA1791N			
IC2	8-752-374-12	IC CXD2522R-T6			
IC4	8-759-427-15	IC MB814400C-70PFTN			
IC5	8-752-904-92	IC CXP84640-050Q			
IC6	8-759-823-87	IC LB1638M			
IC7	8-759-370-18	IC BA6797FP-E2			
IC501	8-752-378-67	IC CXD2548R			
IC551	8-759-428-57	IC LC89170M-TLM			
IC601	8-759-335-52	IC BA6195FP-YT2			
		< COIL >			
L103	1-412-060-11	INDUCTOR CHIP	22uH		
L501	1-412-060-11	INDUCTOR CHIP	22uH		
L503	1-412-060-11	INDUCTOR CHIP	22uH		
		< TRANSISTOR >			
Q1	8-729-901-05	TRANSISTOR	DTA124EK		
Q2	8-729-011-95	TRANSISTOR	RN-2426		
Q3	8-729-141-48	TRANSISTOR	2SB624-BV345		
Q4	8-729-901-00	TRANSISTOR	DTC124EK		
Q5	8-729-901-00	TRANSISTOR	DTC124EK		
		< RESISTOR >			
R101	1-216-295-00	SHORT	0		
R102	1-216-081-00	METAL CHIP	22K	5%	1/10W
R103	1-216-081-00	METAL CHIP	22K	5%	1/10W
R104	1-216-103-00	METAL CHIP	180K	5%	1/10W
R105	1-216-103-00	METAL CHIP	180K	5%	1/10W
R106	1-216-001-00	METAL CHIP	10	5%	1/10W
R108	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R109	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R110	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R111	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R112	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-097-00	RES,CHIP	100K	5%	1/10W
R115	1-216-073-00	METAL CHIP	10K	5%	1/10W
R140	1-216-073-00	METAL CHIP	10K	5%	1/10W
R141	1-216-081-00	METAL CHIP	22K	5%	1/10W
R142	1-216-089-00	RES,CHIP	47K	5%	1/10W
R143	1-216-093-00	RES,CHIP	68K	5%	1/10W
R203	1-216-097-00	RES,CHIP	100K	5%	1/10W
R209	1-216-089-00	RES,CHIP	47K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R210	1-216-841-11	METAL CHIP	47K	5%	1/16W
R213	1-216-049-11	RES,CHIP	1K	5%	1/10W
R214	1-216-864-11	METAL CHIP	0	5%	1/16W
R217	1-216-081-00	METAL CHIP	22K	5%	1/10W
R218	1-216-089-00	RES,CHIP	47K	5%	1/10W
R219	1-216-097-00	RES,CHIP	100K	5%	1/10W
R220	1-216-097-00	RES,CHIP	100K	5%	1/10W
R222	1-216-845-11	METAL CHIP	100K	5%	1/16W
R223	1-216-841-11	METAL CHIP	47K	5%	1/16W
R224	1-216-841-11	METAL CHIP	47K	5%	1/16W
R301	1-216-025-00	RES,CHIP	100	5%	1/10W
R302	1-216-037-00	METAL CHIP	330	5%	1/10W
R303	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R304	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R305	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R306	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R307	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R308	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R309	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R310	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R311	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R312	1-216-121-00	RES,CHIP	1M	5%	1/10W
R313	1-216-089-00	RES,CHIP	47K	5%	1/10W
R314	1-216-103-00	METAL CHIP	180K	5%	1/10W
R315	1-216-085-00	METAL CHIP	33K	5%	1/10W
R316	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R317	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R318	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R319	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R320	1-216-097-00	RES,CHIP	100K	5%	1/10W
R333	1-216-864-11	METAL CHIP	0	5%	1/16W
R334	1-216-089-00	RES,CHIP	47K	5%	1/10W
R398	1-216-296-00	SHORT	0		
R399	1-216-296-00	SHORT	0		
R501	1-216-097-00	RES,CHIP	100K	5%	1/10W
R502	1-216-073-00	METAL CHIP	10K	5%	1/10W
R503	1-216-121-00	RES,CHIP	1M	5%	1/10W
R504	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R505	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R506	1-216-073-00	METAL CHIP	10K	5%	1/10W
R507	1-216-125-00	METAL CHIP	1.5M	5%	1/10W
R508	1-216-105-00	RES,CHIP	220K	5%	1/10W
R509	1-216-113-00	METAL CHIP	470K	5%	1/10W
R510	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R511	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-081-00	METAL CHIP	22K	5%	1/10W
R524	1-216-813-11	METAL CHIP	220	5%	1/16W
R525	1-216-813-11	METAL CHIP	220	5%	1/16W
R526	1-216-813-11	METAL CHIP	220	5%	1/16W
R527	1-216-813-11	METAL CHIP	220	5%	1/16W
R528	1-216-296-00	SHORT	0		
R529	1-216-073-00	METAL CHIP	10K	5%	1/10W
R530	1-216-295-00	SHORT	0		

SERVO **SUB**

Ref. No.	Part No.	Description			Remark
R531	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R532	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R533	1-216-065-00	RES,CHIP	4.7K	5%	1/10W
R551	1-216-089-00	RES,CHIP	47K	5%	1/10W
R552	1-216-809-11	METAL CHIP	100	5%	1/16W
R553	1-216-809-11	METAL CHIP	100	5%	1/16W
R554	1-216-809-11	METAL CHIP	100	5%	1/16W
R555	1-216-809-11	METAL CHIP	100	5%	1/16W
R601	1-216-081-00	METAL CHIP	22K	5%	1/10W
R602	1-216-295-00	SHORT	0		
R603	1-216-085-00	METAL CHIP	33K	5%	1/10W
R604	1-216-097-00	RES,CHIP	100K	5%	1/10W
R605	1-216-081-00	METAL CHIP	22K	5%	1/10W
		< VIBRATOR >			
X1	1-760-365-11	VIBRATOR, CERAMIC (10MHz)			
**********					
*	1-659-834-11	SUB BOARD			
		**********			
		< CONNECTOR >			
CN1	1-770-347-21	CONNECTOR, FPC 6P			
**********					
		MISCELLANEOUS			
		**********			
18	1-475-684-11	INVERTER UNIT, EL			
19	1-776-527-71	CORD (WITH CONNECTOR) (ISO) (POWER)			
20	1-777-246-21	CORD (WITH CONNECTOR) (ANTENNA)			
207	1-659-880-11	MOTOR FLEXIBLE BOARD			
⚠210	8-820-010-06	PICK-UP, OPTICAL KSS-521A/K1RP			
212	1-659-881-11	PICK-UP FLEXIBLE BOARD			
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A			
M901	X-3373-096-1	MOTOR ASSY (SPINDLE)			
M902	A-3301-107-A	MOTOR ASSY, SLED (SLED)			
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING (LOADING)			
**********					
		ACCESSORIES & PACKING MATERIALS			
		**********			
	1-473-067-71	REMOTE COMMANDER (RM-X4S)			
	3-012-070-01	LABEL (SOUND) (2) (for RM-X4S)			
	3-866-230-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH, PORTUGUESE,SWEDISH) (AEP,UK)			
	3-866-230-21	MANUAL, INSTRUCTION (FRENCH,GERMAN, DUTCH,ITALIAN) (AEP)			
	3-866-230-31	MANUAL, INSTRUCTION (GERMAN) (G)			
	3-866-235-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,PORTUGUESE,SWEDISH) (AEP,UK)			
	3-866-235-21	MANUAL, INSTRUCTION, INSTALL (FRENCH, GERMAN,DUTCH,ITALIAN) (AEP,G)			
	X-3373-926-1	CASE ASSY			
**********					

Ref. No.	Part No.	Description	Remark
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-794-09	SCREW +PTT 2.6X10 (S)	
#2	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#3	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
#4	7-621-255-15	SCREW +P 2X3	
#5	7-621-772-20	SCREW +B 2X5	
#6	7-627-850-28	SCREW, PRECISION +P 1.4X3	
#7	7-628-253-00	SCREW +PS 2X4	
#8	7-627-553-17	SCREW, PRECISION +P 2X2 TYPE3	
#9	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE3	
#10	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE3	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
251	3-009-613-21	FRAME	
252	3-386-828-01	SCREW, FITTING	
* 253	3-358-697-01	BUSHING	
254	3-022-310-01	COLLAR	
255	3-934-325-01	SCREW, +K (5X8) TAPPING	
256	1-465-459-21	ADAPTOR, ANTENNA	
257	3-027-138-01	SPRING, FITTING	
258	1-776-527-71	CORD (WITH CONNECTOR) (ISO) (POWER)	
259	X-3369-817-1	BRACKET ASSY (for RM-X4S) (AEP,UK)	
260	X-3373-432-1	BRACKET ASSY (for RM-X4S) (AEP,G)	
261	7-685-248-14	SCREW +KPT 3X12 TYPE4	



The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.